

PULP & PAPER

APRIL 1956—30th Year

"Blue Ribbon" Panel Speaks Again

Page 75

Agree on Additives Law

Page 88

How Valdosta Handles Effluent

Page 114



What's the outlook for 1975? 2000?

Will the industry be as profitable?

(Louisiana forest scene)

Here's where to look for help on Papermaking Problems!

If you're looking for answers to any of the papermaking problems listed on this page, the best place to find them is at Cyanamid where we handle the broadest line of papermaking chemicals in the industry.

Our Technical Service Staff, trained in every phase of papermaking, can be of valuable help. If they can't give you an immediate answer to your problem, our Research Laboratory or Application Laboratory is available for assistance.

Just run down the list below, and tick off your problems—we'll make it our problem to find the right answer for you.

SIZING

- () **BRIGHTNESS.** Where color is important, Cyanamid offers the lightest grades available anywhere in ACCOBRITE® Rosin Size (X, WG).
- () **COLOR STABILITY.** ACCOBRITE shows less degradation on aging than other sizes.
- () **DUSTING.** Use low-dusting ACCOBRITE dry, or use liquid sizes (save on handling, too).
- () **COST.** There's economy in CYFOR® Fortified Rosin Size (35-45% less required); or in unbleached grades use FF and Dark Wood Rosin Sizes.
- () **FOAM.** Use non-foaming ACCOBRITE (zero foam index), low-foaming CYFOR or FF Sizes. Or check foam with CYNOL® Defoamers.
- () **HIGH SIZE SPECS.** Boost hard size specifications with CYFOR Fortified Rosin Size (lower cost, too).
- () **ACID AND ALKALI RESISTANCE.** Especially effective beater additive is CYRON® Size (needs no alum, rosin or wax). Surface size with CYRON and starch for high ink and lactic acid resistance.
- () **WATER, LACTIC ACID.** 25 grades ALWAX® and WAXINE® Sizes to improve resistance to water, writing or printing inks, varnishes and lactic acid. AEROSIZE® Sizes (high free rosin) boost water resistance.
- () **FINE PAPER SIZING.** When sizing fine papers use iron-free Alum for highest brightness. Improve surface with CYRON, ALWAX or WAXINE. Reduce pick and curl with PAREZ® 607 Resin.



AMERICAN CYANAMID COMPANY
PAPER CHEMICALS DEPARTMENT
30 Rockefeller Plaza, New York 20, N. Y.

Please have your Technical Representative call on the problems checked above.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

In Canada: North American Cyanamid Limited, Toronto and Montreal

COATINGS

- () **RAW STOCK.** Coating raw stock sized with CYRON takes more uniform coatings to lesser depth; smoother, better printing surface.
- () **CLAY AND OTHER PIGMENTS.** Improve plasticity, water resistance, surface smoothness, supercalendering and reduce dusting-off with ALWAX Sizes in clay-pigment coatings.
- () **PROTEIN-PIGMENT.** Raise wet-rub resistance with PAREZ 613 Resin.
- () **STARCH COATING.** Make starch coatings waterproof by adding PAREZ 608 Resin.
- () **STARCH PIGMENT.** Coatings take on higher wet-rub resistance when treated with PAREZ 608 or 612.
- () **COATING ADHESIVES.** Control viscosity and fluidify adhesives with AZITE® 900 Liquefier. Also use AZITE to preserve paper strength.

WET STRENGTH AND OTHERS

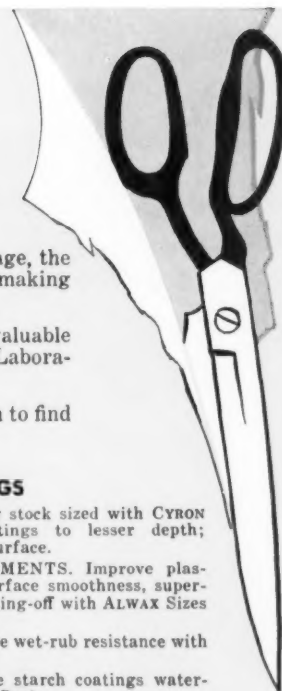
- () **WET STRENGTH.** Highest wet strength, developed right off the reel, is imparted by PAREZ 607 Resin, a MELOSTRENGTH® Resin. Lower degrees of wet strength secured with urea-formaldehyde resins.
- () **COLOR RETENTION.** Better dispersion of pigments and fillers, and better retention of color, secured with ACCOCEL® 741 Dispersant.
- () **LINTING.** Linting of wiping papers, towels, tissues and napkins is reduced by use of PAREZ 607 Resin.
- () **ABSORBENCY.** Improve water-absorbency of toweling, napkins, or tissues with CYNOL Rewetting Agents—surface or slush-stock application.
- () **PICK.** Reduce pick in printing papers by treating with PAREZ 607 Resin.
- () **CURL.** Curl in paper can be effectively controlled by addition of ALWAX or WAXINE Sizes or PAREZ 607 Resin.
- () **SOFTNESS.** Permanent softness of tissue, absorbent papers imparted by CYNOL Softening Agents.
- () **BROKE.** We have a lot of experience with wet-strength broke recovery that can be applied to problems you may encounter.
- () **CHEMICAL HANDLING.** Use of liquid Alum and rosin size will simplify mill handling and may greatly reduce chemical costs.
- () **PITCH.** Disperse with ACCOCEL® 741 Dispersant. Also effective in dispersion of ink, asphalt and other foreign matter.
- () **FILLER, FIBER RETENTION.** Good retention of filler and fiber is promoted by the use of Sodium Phospho Aluminate.

* Trade-mark
® Registered trade-mark

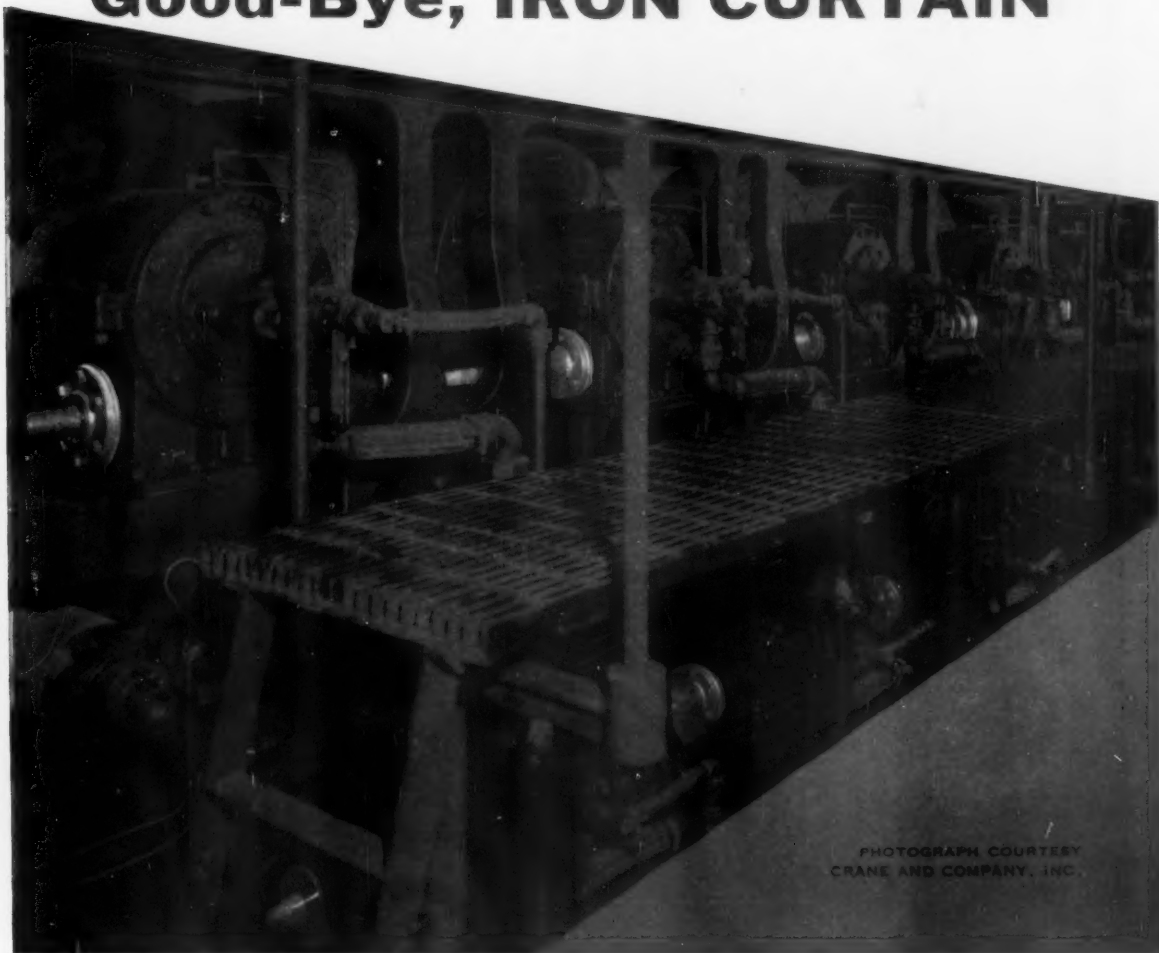
you name it

We can't begin to cover all the possible problems in this space. If you have any special ones not mentioned that we can help with, note them here.

- () _____



Good-Bye, IRON CURTAIN



PHOTOGRAPH COURTESY
CRANE AND COMPANY, INC.

Rice Barton's new Worm Gear Drive* has eliminated the Iron Curtain of Dryer Gears.

Now the drying characteristics of the front and back sides of the section are alike.

The Rice Barton Worm Gear Drive* provides equalized ventilation plus quieter safer operation.



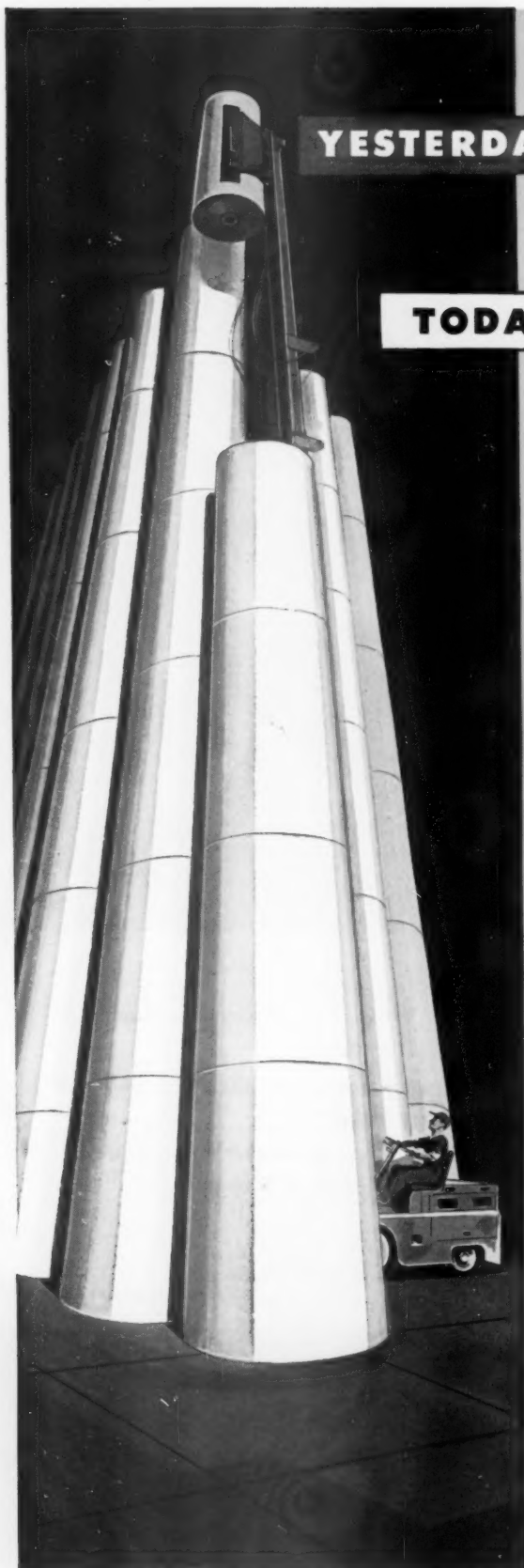
* PATENT APPLIED FOR

RICE BARTON CORPORATION

Worcester, Massachusetts

Paper Machine Builders Since 1837

West Coast Distributor: Ray Smythe . . 501 Park Building • Portland, Oregon



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of the market**

**TODAY . . . expanding to meet
the needs of the industry**

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no great burden on your machines.

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the squeeze on supply, you need the extra
margin of productive capacity that's
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At PuseyJones, there's a 90-year-old
tradition of machine-building aimed at
just one goal: To put you out ahead . . .
years ahead . . . of your own production
needs! That's why today's investment
in a PuseyJones Machine is tomorrow's
insurance — for top capacity production
. . . ten . . . twenty . . . or thirty years ahead.

If it's time to add a new machine . . . or
modernize an old one . . . let PuseyJones
engineers work with you, to help you
meet today's expanding needs,
tomorrow's even greater demands.

Write or call us today.

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Established 1848 : : Builders of Paper-Making Machinery

*Fabricators and Welders of all classes of
Steel and Alloy Products*

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Office of Editor

1791 Howard St., Chicago 26, Ill.
Rogers Park 4-3420

Advertising & Production Office

370 Lexington Ave., New York 17, N.Y.
Murrayhill 3-9294

Atlanta 19, Ga.—2900 Winding Ln. N.E., ME 6-2385
Seattle 4, Wash. — 71 Columbia St., MA 1626
Vancouver 3, Can.—402 Pender St. W., MA 7287
New Orleans 18, La.—3518 Dante St., AM 2762
Portland 4, Ore.—534 SW 3rd Ave., CApitol 3-6348
San Francisco 5, Calif.—121 2nd St., GA 1-5887
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● COVER PICTURE

Louisiana forest pictured on cover is typical of Southern forests now being called upon to meet growing and unprecedented demands for pulp and other wood products (Photo courtesy American Forest Products Industries).



Like Holyoke Series

I want to compliment you on the fine way you have prepared the series of articles on the pulp and paper industries of Holyoke. I received a number of phone calls as a result of it, too, and they were all very complimentary.

HENRY BURGEE
General Manager
Parsons Paper Co.

The series on Holyoke is very interesting and informative.

ANNE G. TOOMEY
Secretary-Treasurer, Salesmen's
Assn. of the Paper Industry

Misleading Magazine Story

Regarding your editorial in the February PULP & PAPER, apparently Secretary Ickes and Liberty Magazine did not take the time to find out what was really happening on the Coast, or else they had in mind Wisconsin, Michigan, and Minnesota some years ago. I believe that one of the big things that these editorials and different comments do is to keep before some of our people the need for bigger and better tree farms.

R. J. LE ROUX
Everett Mill Manager, Pulp
Div., Weyerhaeuser Timber Co.

Valuable Material in PULP & PAPER

The valuable material in PULP & PAPER'S WORLD REVIEW NUMBER is useful in connection with testimony I am preparing . . . Do you permit use of such material, as I require, together with copying material for exhibit purposes?

In every case, the source will be indicated.

PROF. ROLAND L. KRAMER,
Wharton School of Finance and
Commerce, University of Pennsylvania.

(Eds. note—Answer was yes.)

Gives Forest Industries' Side

Your articles on the U. S. Forest Service's decennial Timber Resource Review, in your December issue lead story and since then, are the first and the only such articles that have reliably presented the forest industries' side of this issue. You have been fair to the Forest Service, and at the same

time pointed out several fallacies in its conclusions regarding the present and future status of our national timber resources.

Also, your articles are the first that reflect the thinking of technical men and important experienced foresters outside of the U. S. Service. The information you presented should be made available to the general public.

A Leader in Pulp and Paper
Community Relations Work
(name withheld at request).

Looking for U.S.A. Exports

We are long-established commission agents in Alexandria, Egypt. We are writing to advise you that we are looking for a reliable source of supply of kraft linerboard and chipboard in the United States.

We would be grateful for the addresses of: (1) Mills advantageously located for export of these items to Egypt, and (2) Reliable exporters, specializing in papers and boards.

We are not asking, at this stage, for an exclusive agency, which is a matter that can be settled later after mutually satisfactory experience.

With our sincere thanks,

P. M. CARCALLIS
Chemicals and industrial raw
materials, Manufacturers' distributor and agent, 18 Sesostri
St., Alexandria, Egypt. (Cable
address: Peemce, Alexandria.)

Glad to be of Service, Bob

I am in the 6th grade and we are making notebooks on paper (sic) products and I was wondering if you could give me some addresses of rayon mills. It would help me very much.

BOB WILLIAMSON
14 Motley St.
Portland, Me.

(Eds. note—Bob got his list! We explained to Bob that more rayon and acetate than ever before in history is being made from woodpulp, about 90%; and less than ever from cotton linters.)

Very Useful

We, here, find PULP & PAPER an extraordinary useful publication and it is in constant reference.

KENNETH G. BRAIDWOOD
The Economist, London, England

Future Industry Men Read P&P

The Lippincott Library of Wharton Business School is grateful to have PULP & PAPER'S WORLD REVIEW NUMBER.

Since many students at Wharton School are future businessmen in this field they will thus become familiar with this book and learn its value.

ELEANOR B. ALLEN
Librarian
University of Pennsylvania.

Within a Seed

(Dr. L. E. Wise, Head of Wood Chemistry Group, Institute of Paper Chemistry, sends us his comments in verse form.)

Within a seed no greater than my nail
Repose vast possibilities for growth,
Stretching beyond the new synthetic
marvels wrought by man.

This seed may bring into the light
A noble trunk which men will
Awkwardly, and midst the strife
Of other men, transform into the printed
page.

It may produce a massive stem
That, ponderously, man will fashion
(Aided by slash of saw and hiss of steam,
And midst a nauseating stench,
Mindful of charnel house or alchemistic
den)
Into an iridescent rayon cloth
In which the modern maid
Will clothe her slender body.

Again—'t may give a tree
The bark of which can yield medicaments,
Potent as those that raised proud Cinchon's wife
From her Peruvian couch.

Or from it may be born
A billet of great size
Which, rasped and sawn,
Will generate strange dyes:—

The velvet black of Stygian night
Or golden tints,
Or fiery reds, that marked the woods of
vast Brazil.

To criticize this theme there is no need
I know they couldn't all come from ONE
seed.

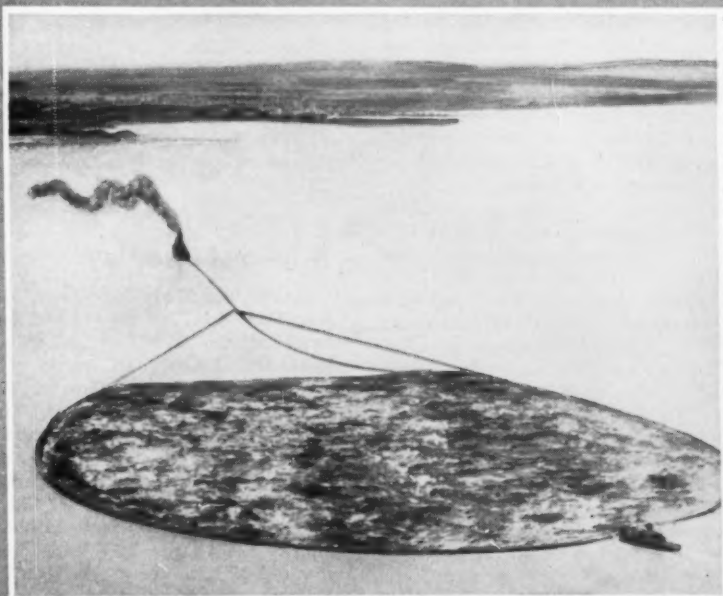
HERE'S HOW to address your letter to this department:

No anonymous letters
will be considered
but names may be
withheld if desired.



PAPER LOG ROUNDUP:

Dramatic "Watering" method rafts logs to Consolidated's Mills



THESE 8,000 CORDS of pulpwood logs, enough to fill 400 railroad cars, will become paper pulp at Consolidated Water Power & Paper Company's mills. Finished paper will be used by leading publishers and commercial printers throughout the country.



SPLASH creates haze as more pulpwood tumbles off the watering chute, to be gathered into completed rafts. Paper made from these logs will get some of its glossiness from Huber coating clays.

UNTIL THE ICE BREAKS on lake, pulpwood is stockpiled on landings. As contractors bring logs to Sugar Loaf for sale, rough spruce cordage is measured on the spot.



...where Huber coating clays help give Consolidated's enamel papers their smooth finish

J. M. HUBER CORPORATION • 100 Park Avenue, New York 17

Headquarters for Clay Technology



Developers of VISCONTROL® • Authors of "Kaolin Clays and Their Industrial Uses"

Producers of a Complete Range of Clays for Modern Papermaking

MINES AND PLANTS: HUBER, GA., LANGLEY, S. C.

This story first appeared in HUBER NEWS. Ask to be put on our mailing list.

Would you like to see a modern clay plant? We'd be pleased to show you through our mines and plants in the heart of America's clay country—we think they're the industry's finest. Write for trip arrangements—and to improve the quality of your papers, write for working samples and specifications of any of our nine filler and coating clays.

Southern Sidelights

WILLARD E. HAHN, vice pres. of St. Regis Paper Co., is now mgr. of mfg. for all St. Regis packaging and converting plants as well as engineering and machine department of the company. **WILLIAM E. CALDWELL**, formerly res. mgr. of St. Regis operations at Kalamazoo, takes over as gen. mgr. of Pensacola Kraft Center. . . . **JOHN T. HARRISON**, formerly mgr. of Savannah Bag Div. of Union Bag & Paper Corp., has been upped to vice pres. in charge of board and corrugated paper sales with the firm. He has been with Union since 1933. In 1951 he became mgr. of the company's Chicago box plant. . . . **J. R. BOYKIN** remains as gen. mgr. of the Mobile Paper Mill, Stone Container Corp., under its new management organization. . . . **HUGH S. KIMBALL**, has been appointed sales mgr. of Cameron & Barkley Co., headquartered in Jacksonville, most centrally located of the company's six supply outlets. . . .

J. H. MARTIN, vice pres. and gen. prod. mgr. of Sonoco Products Co., was elected recently to board of trustees of Winthrop College by South Carolina General Assembly. . . . Sonoco Pres. **J. L. COKER** has been elected a director of National Association of Manufacturers. . . . Two other staff additions at Sonoco are **JIM COOPER**, now secretary to **BOB WHITE**, prod. mgr., and **FLOYD POWELL**, former senior machine design engineer, new paper mill engineer of Corrugated Board Div. . . . **DELWOOD C. LEE** has been placed in charge of sales of U. S. Rubber Co. products in New Orleans. . . .

ED STOUT, formerly with Forest

Products Institute, is now director of public relations for Bowaters Southern at Calhoun, Tenn. . . . **DR. GEOFFREY W. RAKE** is new scientific director of International Div. of Olin Mathieson Chemical Corp. A native of England, Dr. Rake holds two medical degrees from Univ. of London. He was formerly associated with research staff of Rockefeller Institute for Medical Research and was one time head of microbiology for Squibb Institute for Medical Research. . . . **BENNETT A. CLUBBS**, plant eng. at International's Panama City mill, is moving to IP's Bastrop, La., mill. He will be replaced at Panama City by **C. R. SHAW**, asst. plant eng. there. . . . Rust Engineering Co. has named **HENRY C. GOODRICH** a vice pres. He will be in charge of sales estimates at Birmingham, Ala. . . . New assignments in selling products of the Gaylord Mill of Louisiana on the Pacific Coast are **PAUL WESTERNOFF**, new Coast manager, **DON HARNISH**, **JAMES H. OLIVER, JR.**, **BERNARD L. SMITH** and **GEORGE E. WASHBURN**. Their new duties follow Crown Zellerbach-Gaylord merger. All had been on the Coast previously.

J. L. HOLLIS has been named mill agent at Bagpak plant, International Paper Co. at Bastrop, La., announces **J. P. MONGE**, treas. of the company. Mr. Hollis was born in 1919 in Marion, La. and attended U. of Arkansas. . . . **WALTER C. GEORGE**, director of research and development, Gaylord division of Crown Z., Bogalusa, La., gave a lecture at Michigan State University on packaging and shipping fresh fruits and vegetables. Mr. George and **WILLIAM T. NYE**, Gaylord patent department, also

spoke at a packaging seminar at Purdue Univ. Mr. George covered fibreboard containers and Mr. Nye the legal aspects of packaging.

A. B. MOORE JR., former asst. to the company gen. mgr., is new production mgr. of Crossett's Paper Mill No. 2, and **JACK E. MEADOWS** moved up from asst. mgr. of Mill No. 1, to asst. paper div. mgr. under **J. C. HAIR**. . . this news followed resignation of **DAVID B. KUHE**, who became gen. mgr. of production at Hudson Pulp & Paper, Palatka, Fla.

Midwest Medley

DAVID BRITAIN, vice pres., Mead Pulp Sales, Inc., and his Midwest territory assistants, **BOB CALLAHAN** and **WOLCOTT HENRY**, are mighty proud of their spanking new offices at 1725 Opera Bldg., 20 Wacker Dr., Chicago. They are now off by themselves, separated from Mead board and paper sales, though still in the same building. New phone number: ANdover 3-6035 . . . **ALLAN B. MILHAM**, farming gentleman of Kalamazoo Valley and former pres. of Michigan Paper Co. of Plainwell, and Mrs. M. made a trip South by car in February. . . .

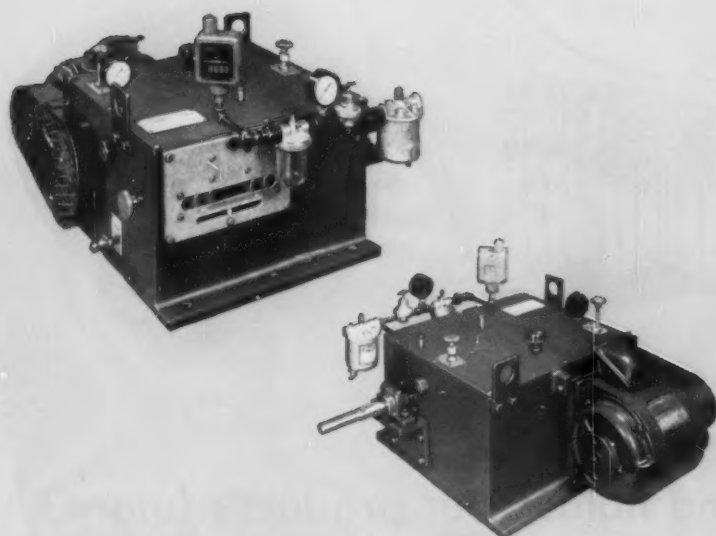
GEORGE M. SUNDAY and Associates, personnel consultants to the pulp and paper industry, have moved to new offices at 6 East Monroe St., Chicago 3, Ill. Phone: ANdover 3-1970. They do procurement and placement of qualified personnel and consulting. The head of the firm is a grandson of the famed Rev. Billy Sunday. Now 42, G. M. Sunday

Continued on page 10



TAKING A LOOK AT BRUNSWICK PULP & PAPER OPERATIONS. At extreme left, **THOMAS B. MCCABE**, President of the Scott Paper Co., co-owner of Brunswick Pulp & Paper Co., seems pleased with additions in the digester area at the mill during a tour last month. Left to right: Mr. MCCABE; **JOHNSON WARD**, of Merrill, Lynch, Pierce, Fen-

ner and Beane; **J. W. DRAKE**, of Brunswick staff; **PAUL WYANT**, Scott Paper Co. Treasurer, and Engineer **LARRY THOMPSON**. At right, **C. F. KETTERING**, reknowned engineer, Director and Consultant for General Motors and a Director in Mead Corp., the other-half owner of Brunswick, relaxes with **MALCOLM B. PINEO**, Tech. Dir. at Brunswick.



Hydros oscillator

HELP YOUR REWINDER DO A BETTER JOB

Install a Ross Midwest Fulton Hydros oscillator on your rewinder and keep wrinkles out of your rolls - also hard and soft spots. And what better way to eliminate customer complaints!

Ross Midwest Hydros oscillators are hydraulically operated - can be set to deliver strokes of from $\frac{1}{8}$ " to $3\frac{1}{4}$ " as required. Oscillating speed from 0" to 24" per minute. Thrust up to 11,000#. Effective on rolls of all sizes - even the very largest. Space required - very little.

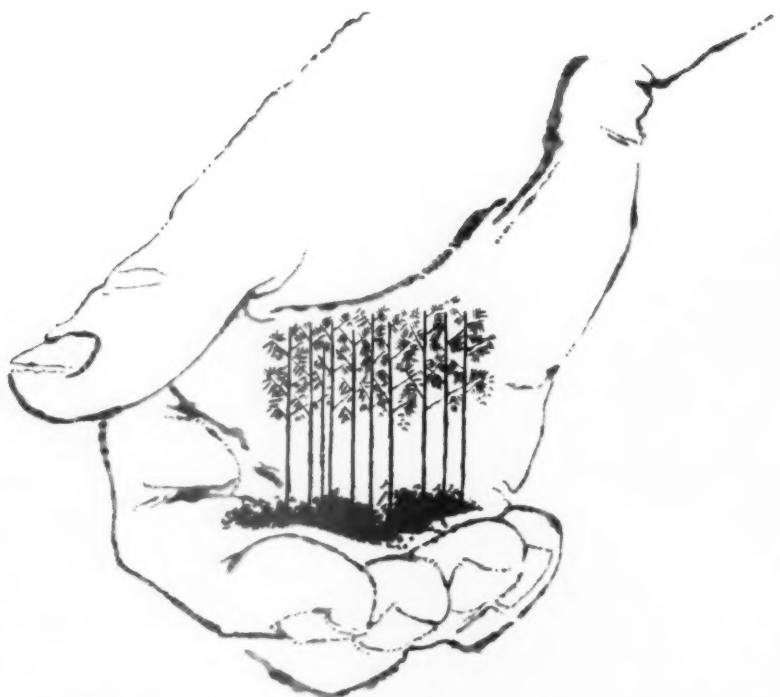
Although comparatively new, a score or more mills have already installed Hydros oscillators and pronounced them "good" - a really worthwhile help at the rewinder.

Ask for Bulletin No. 101

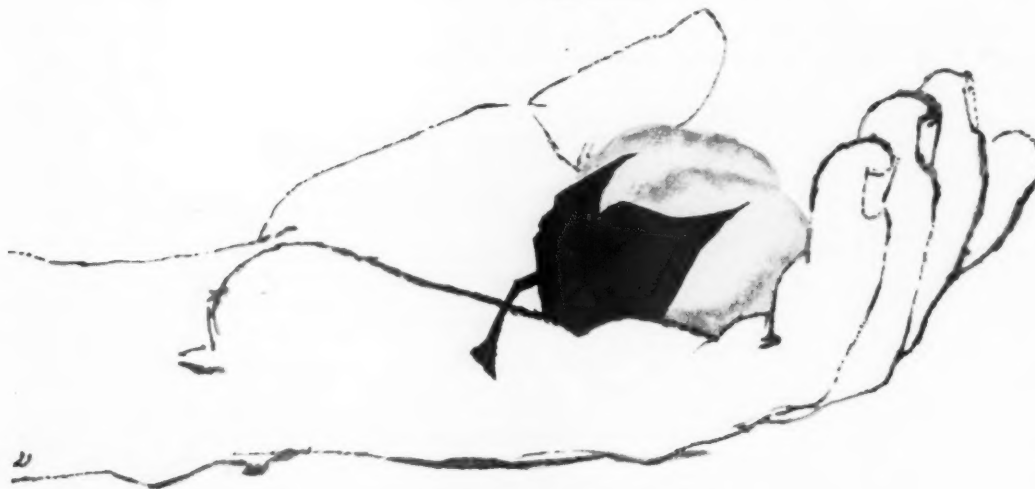
ROSS MIDWEST FULTON CORP.

DAYTON, OHIO

A subsidiary of J. O. Ross Engineering Corporation



Which hand holds your product's future?



Both, perhaps—for *only* Buckeye can supply quality cellulose from *both* cotton linters and wood pulp. This versatility is one of the unique advantages Buckeye can offer each and every account.

Whichever you choose—wood or cotton—you're always right with Buckeye. As industry's first producer of cellulose, Buckeye has the experience to "tailor" cellulose products to your exact specifications. And Buckeye backs up its products with superior customer service—the kind that *anticipates* your needs . . . that seeks to develop the cellulose best suited to your business *in advance*.

Finally, you can rely on Buckeye to see to it that your order is processed, cut, and loaded—*exactly as specified*.

Buckeye Cellulose Corporation, Memphis 8, Tenn.



BUCKEYE

First in cellulose



A UNION BAG

The Union Bag & Paper Corporation has made many billions of bags like this in its plant at Savannah — the world's largest pulp and paper mill and integrated kraft container plant.

Since 1940, Union Bag has purchased five C-E Recovery Units for installation in this plant, among them the world's largest chemical recovery unit. The aggregate capacity of these units is over 1600 tons.

And now another Combustion product, the world's largest bark burning unit, will soon be installed in this impressive mill.

This repeat order record with Union Bag & Paper Corporation points unmistakably to satisfaction... satisfaction with advanced design, with reliability, with economy and performance of C-E products. Many other leading mills throughout the world have evidenced a similar disposition to purchase C-E equipment again and again.

So when you need a recovery unit... a boiler... fuel burning or related equipment — large or small

See C-E!

COMBUSTION ENGINEERING

Combustion Engineering Building, 200 Madison Ave., New York 16, N.Y.
Canada: Combustion Engineering-Superheater Ltd.

steam generating units; nuclear reactors; paper mill equipment; pulverizers;
flash drying systems; pressure vessels; domestic water heaters; soil pipe



B-861

STRICTLY PERSONAL

MORE . . . MIDWEST MEDLEY

was at one time the youngest vice president in sales of coarse paper and packaging in the Midwest. . . .

JOHN L. CLOUSE, Oxford Miami Paper Co., was featured dinner speaker at Lake States TAPPI's March meeting. He told of the Ohio section's program with the schools in Ohio and young students in that state—previously described in PULP & PAPER—to interest more of

them in this industry. . . . Now that Kimberly-Clark and International Cellulotton, its former biggest customer, are melded into one company, life has become exciting for at least a couple of its staff in far-off South Africa. **GELINDO SOLDA**, from engineering dept., K-C's Niagara, Wis., mill, was hunting when a bullet from another hunter's gun smacked right into the breach of Mr. Solda's rifle—which he was carrying! The impact



In Industry News

JOSEPH B. MORNINGSTAR (left), great grandson of founder Joe B. Morningstar, is now Vice Pres. of Morningstar Nicol, Inc. He joined company in 1939 with adhesive producing subsidiary, Paisley Products, Inc. in New York.

HORACE F. WINCHELL (right), is new Plant Mgr. of Westminster Paper Co. Ltd., a Scott Canadian affiliate in New Westminster, B. C. His new job puts him on leave of absence from Scott, Chester, Pa., where he was Mgr. of Engineering.

fired his gun, too, but he received only superficial wounds from the explosion. . . . **JAMES FRASER**, Cellucotton salesman in Johannesburg, drove his car over a hillock to see an airplane racing toward him right on the highway. He jumped just in time—car and plane were badly smashed. The flyer said: "Why the h— didn't you get the car out of the way?!" . . . **FOLKE BECKER**, chairman of Rhineland, missed his first Paper Week in many years, off in Southern climes, but his eldest son, and other Rhineland men were there.

MRS. T. E. ORBISON recently became the 30th member of Appleton Woolen Mills' Quarter Century Club and was given a gold watch by her son, **F. H. ORBISON**, president. She has been a director of Appleton since 1925 and president from 1940 to 1956. . . . **M. V. MOLSBERRY**, chief engineer, Consolidated Water Power & Paper Co. says that **GEORGE N. MARCOUX** has been named general construction consultant and **EDWARD P. KRYSHAK**, general construction supt. **HERBERT A. JACKSON** has joined the engineering dept. as civil engineer. . . . **ART BERNHARDT** has been named superintendent of Nekoosa kraft mill, reports **CHARLES REESE**, vice pres., manufacturing for Nekoosa-Edwards Paper Co. Mr. Bernhardt joined Nekoosa in 1952, is a grad of N.Y. State College of Forestry and was with KVP, in Michigan and Espanola, Ont. . . . **ED WEINFURTER** continues in the kraft mill as staff supt. **JOHN E. ALEXANDER**, pres. and gen. mgr. of Nekoosa, was named 1955 "Citizen of the Year" by the Wisconsin Rapids chamber of commerce. . . .

PORTER B. CLAPP is new sales rep for steel strapping division of Stanley Works' Chicago office. . . . Septuagena-

Continued on page 14

when you need stainless steel fittings . . .

CAMCO

The COMPLETE line of
QUALITY

STAINLESS STEEL PIPE FITTINGS

SCREWED FITTINGS
FLANGED FITTINGS
BUTTWELD FITTINGS

Schedules 5, 10, 40 & 80 Flanges
to ASA & MSS standards

**ONE SOURCE for ALL your
STAINLESS STEEL fitting
requirements**

Use attached coupon for Flange Dimensional Slide
Rule and Catalog covering complete line.

CAMCO Products, Inc., 445 State Street, North Haven, Conn.

Gentlemen:

☐ Please send Flange Dimensional Slide Rule.
☐ Catalog #653 covering complete line.
☐ Furnish address of area distributor.

Name _____

Company _____

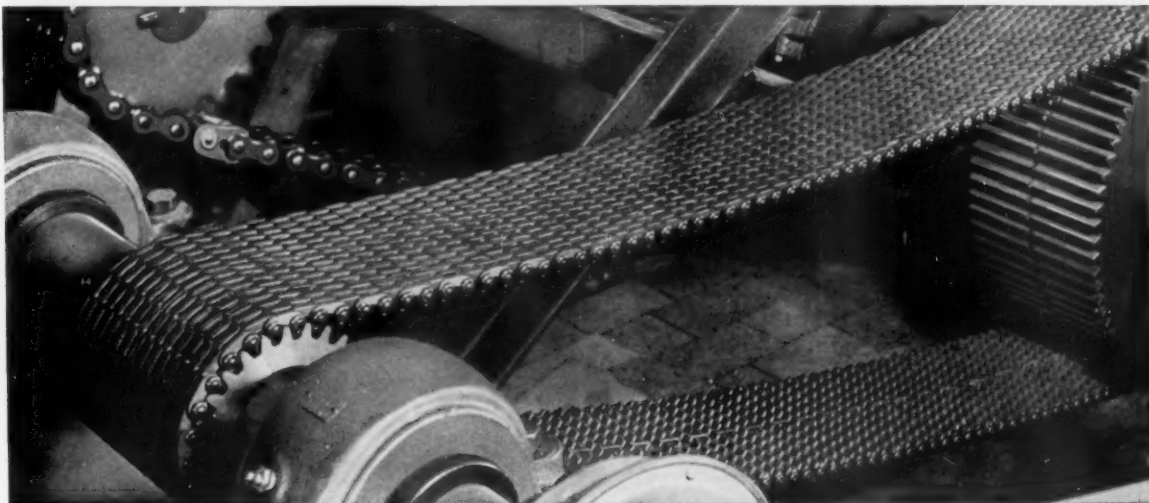
Address _____

City and State _____

THE QUALITY LINE IN STAINLESS

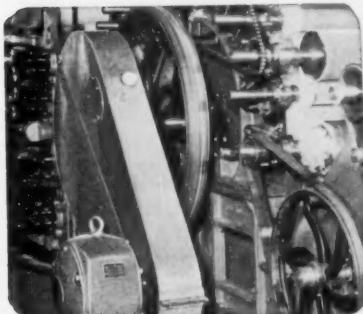
CAMCO Products, Inc. • 445 State Street • North Haven, Conn.

Check your drives against the benefits of **LINK-BELT** silent chain

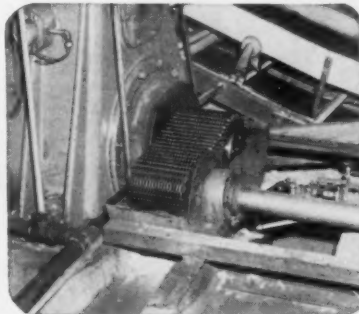


☐ **HIGH SPEED.** Link-Belt silent chain drives are noted for slipless dependability—maintain better than 98% efficiency whether operating over large or

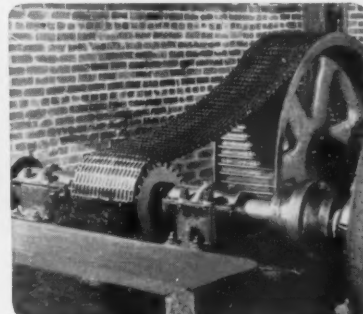
small diameter wheels or on long or short centers. For further details on these and more advantages, call your Link-Belt office or authorized distributor.



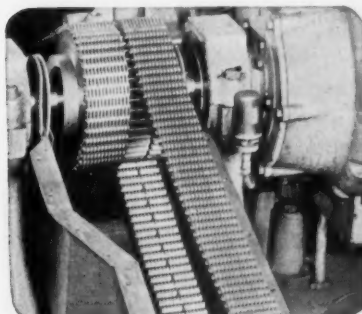
☐ **ADVERSE OPERATING CONDITIONS.** Heat, humidity, cold do not lower Link-Belt silent chain's great efficiency.



☐ **LARGE OR SMALL HP.** A versatile line, these Link-Belt drives are available from fractional to thousands of hp.



☐ **LARGE RATIOS.** Link-Belt silent chain operates efficiently on extremely short centers at ratios as high as 10-to-1.



☐ **LIMITED SPACE.** Easy to assemble in close quarters, Link-Belt silent chain permits built-in drives, compact housings.



☐ **LONG LIFE.** After 13 years on this newspaper press at speeds up to 4,700 fpm, Link-Belt silent chain is still efficient.

Ask for 88-page Book 2425 — complete data on Link-Belt silent chain drives.

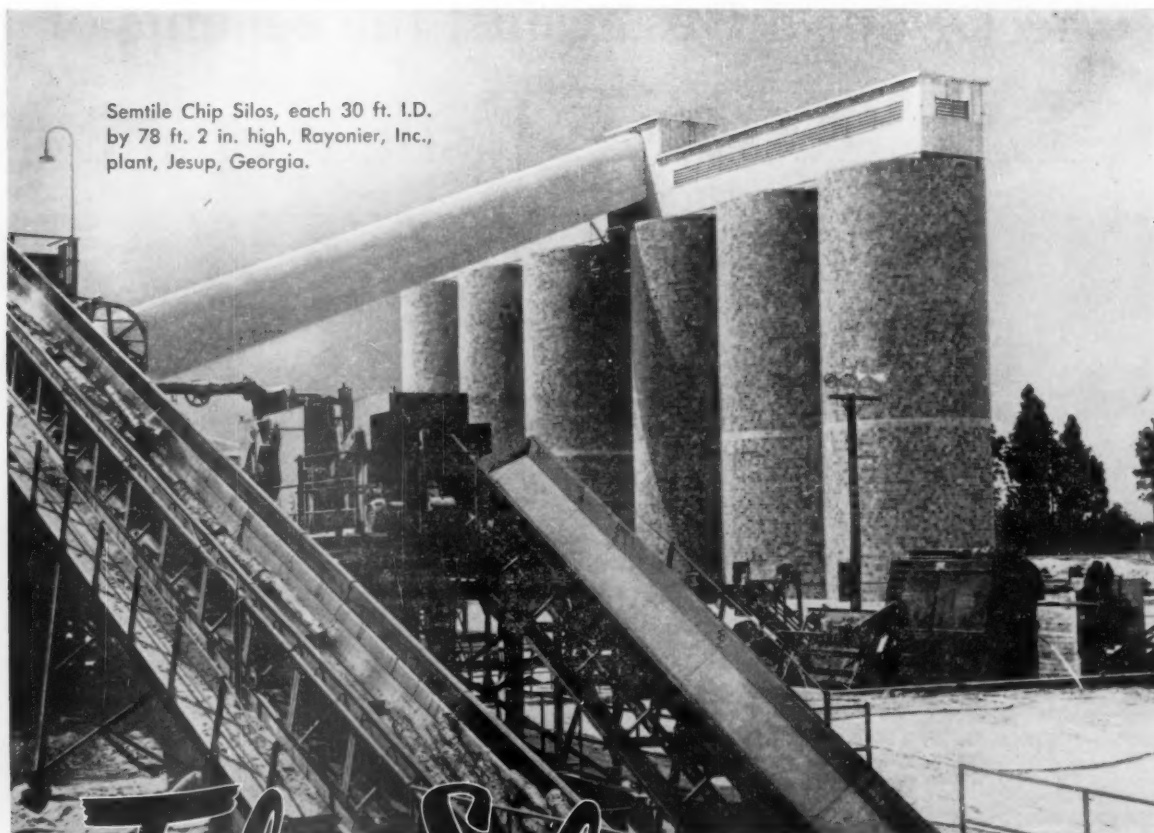


LINK-BELT

14,025

SILVERSTREAK SILENT CHAIN DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World.



Semtile Chip Silos, each 30 ft. I.D. by 78 ft. 2 in. high, Rayonier, Inc., plant, Jesup, Georgia.

Tile Silos

for Storage of Dry Materials

These enormous chip silos, engineered and erected by Stebbins, are steel-reinforced concrete faced inside and outside with vitrified tile. No forms were required—a Stebbins construction method that results in substantial savings.

If you require facilities for storing mate-

rials—dry or wet—in large or small quantities—it will pay you to get Stebbins' recommendation. Or if you need corrosion-resistant process vessels, Stebbins' unequalled experience and facilities for the application of linings and the construction of tile can be extremely valuable to you.

Write for Bulletin A-153

SINCE 1884
Specialists in
Design
Installation
and Servicing
of Linings and
Tile Tanks

STEBBINS

Engineering and Manufacturing Company, Watertown, N. Y.

STEBBINS ENGINEERING CORP. — 1504 TOWER BLDG., SEATTLE, WASH.

CANADIAN STEBBINS ENGR. & MFG. CO., LTD. — CASTLE BLDG., MONTRÉAL, CANADA



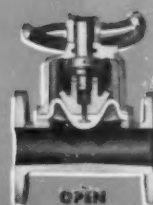
Announcing...
the new,
exclusive

**GRINNELL-
SAUNDERS**

STRAIGHTWAY

**DIAPHRAGM
VALVE**

... the diaphragm valve with
STRAIGHT-THROUGH FLOW,
for handling viscous materials,
fibrous slurries, sludges, pulp
stock, latex, magmas, semi-fluid
foods, solids in suspension,
sewage, water, corrosive chemicals



Diaphragm lifts high for
streamline flow in either
direction. No pockets to
trap sludge



Diaphragm presses tight
for positive closure even
when handling gritty or
fibrous materials

Grinnell-Saunders **STRAIGHTWAY** Diaphragm Valve* offers you these exclusive features: the ability to handle viscous materials without restriction or stoppage; minimum pressure drop; rodding or brushing without need of removing bonnet and without possibility of damaging body linings; self-draining when line is pitched sufficiently to drain piping.

Grinnell-Saunders **STRAIGHTWAY** Diaphragm Valves are available in a range of body, lining and diaphragm materials. Inquiries invited. Bulletin on request.

*Patented

GRINNELL COMPANY, INC.

293 West Exchange St., Providence, R. I.

Kindly send me a complimentary copy of your "Grinnell-Saunders Straightway Diaphragm Valve" bulletin.

Name

Title or function

Company

Address

City State



Grinnell Company, Inc., Providence, Rhode Island

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pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies
industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco air conditioning systems

STRICTLY PERSONAL

MORE . . . MIDWEST MEDLEY

rian (wow) **FRANK HAMMER**, wet felt finisher of Appleton Woolen Mills, recently earned a diploma in human relations from U. of Wisconsin extension division. He joined Appleton in 1902, and has been a foreman since 1917. . . . **DONALD E. BLACK** is new sales training manager for Acme Steel Co., Chicago, advises **G. FINDLEY GRIF-FITHS**, vice president, sales. . . . **W. C.**

CORBIN, chief engr., Black-Clawson Co., Paper machine division, Watertown, envisions vast potential changes in papermaking methods, he told a Michigan div. meeting of APPMSA. He said it didn't seem right to put in over 99% of something at one end of the process that does not exist in the final product; and also which in turn causes trouble and takes several million dollars worth of equipment to dispose of in the final

product. . . . **ANTHONY DeYOUNG**, after 45 years, has retired as advertising manager, Whiting Corp.

RUSSELL MATHER, continuing as gen. mgr. of Stone Container Corp.'s paper mill at Franklin, O., and **BERNARD BAMER**, gen. mgr. of Coshocton, O., mill, report to **MARVIN N. STONE**, exec. vice pres., Chicago, in the the new reorganization. **JOSEPH J. FIORI**, former v.p. of mills, no longer is with the company.

CLEMENT J. KUSNIEREK, chief construction engineer of Mando's central engineering division, and his wife died in an auto accident near Willmar, Minn. They were on their way to Mexico for a vacation. . . . **THOMAS M. CROSBY**, of General Mills, Inc., has been named a director of Minnesota & Ontario Paper Co. He succeeds **C. T. McMURRAY**, senior vice pres., who is retiring.



This Gilbert and Nash Model 434 guide is geared for today's high-speed production requirements. A sealed planetary reduction gear and anti-friction bearings assure trouble-free operation at machine speeds up to 3000 f.p.m.!

This low-contour guide is recommended for wire, wet felt and dryer felt service.

And like all Gilbert and Nash guides . . . Model 434 is engineered for the job!

GILBERT and NASH company

*Manufactured and sold exclusively by The Appleton Machine Company



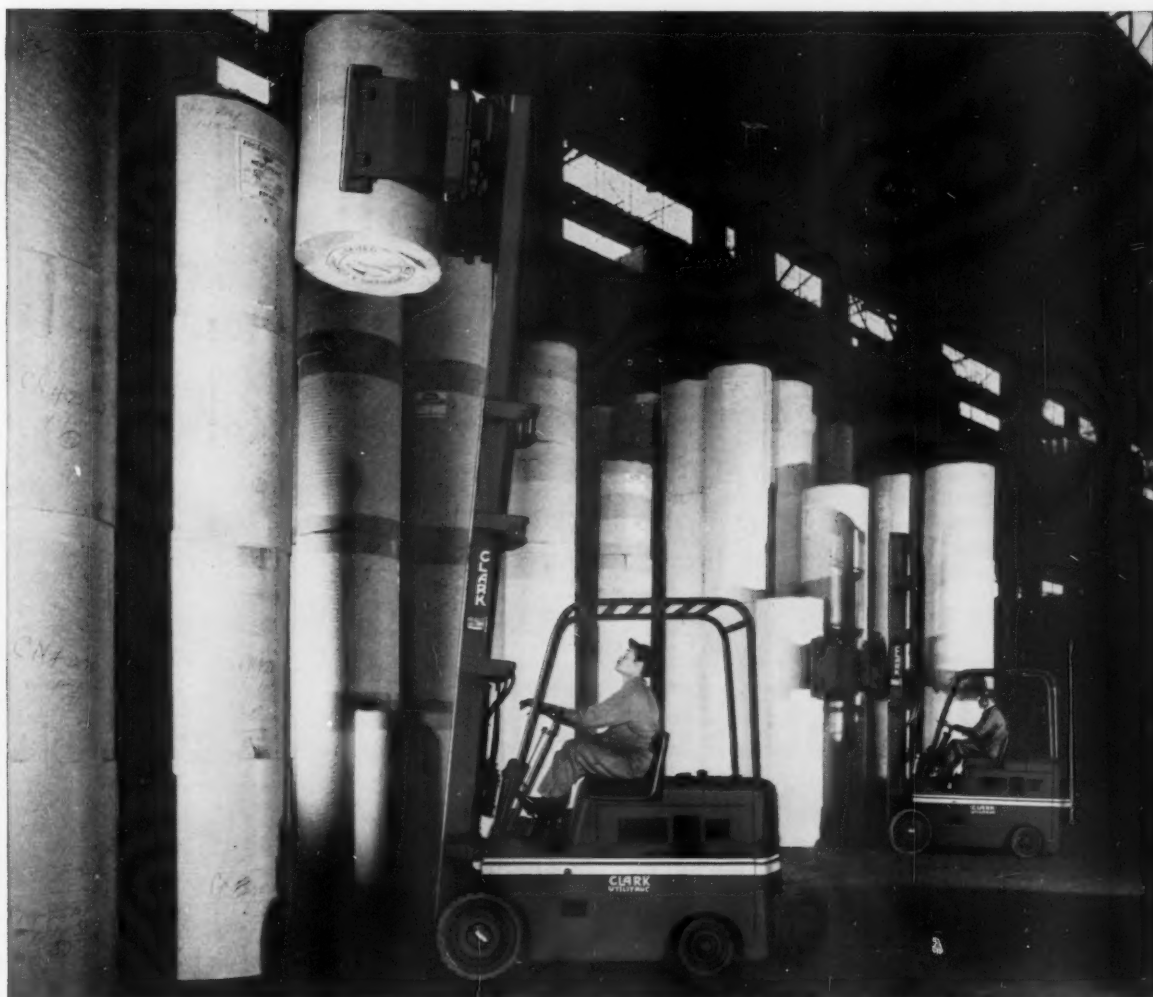
West Virginia News

JOHN D. WHEELER (left), new Dir. and Gen. Mgr. of Rigesa, S.A., Brazilian subsidiary of West Va. P&P Co., succeeds **M. H. "BUD" COLLET**, who has resigned to join a company in the U.S. Mr. Wheeler is a 20-year employee of W. Va., was formerly head of tall oil plant at Covington. He and his family will later move to Sao Paulo, where West Va. has a sales and administrative office. The pulp and paperboard mill and modern box factory at Valinhos, produces corrugated shipping containers, gummed tape, etc. for the Brazilian market. **PAUL WILKINSON** (right), Paper Mill Supt., Williamsburg, Pa. mill of West Va. P&P Co., has retired after more than 46 years.

Notes from Northeast

A Presbyterian pastor for 16 years and still serving in that capacity, has added a new flock at the Stevens-Thompson paper mill at Greenwich, N.Y. Rev. **JOSEPH COGDELL**, who works full time in the mill, is new president of a union local. . . . **HENRY GRABOWSKI**, former pulp mill supt. of Scott Paper Co.'s subsidiary plant in Oconto Falls, Wis., is now in newly created post of plant manager of Scott's Madison, Me., groundwood pulp mill. This mill formerly reported to Scott management in Winslow, Me., and now is under its own plant management. . . . **GENE CLAPP**, pres., Penobscot Chemical Fibre Co., advises

Continued on page 18



Two Clark trucks move 260 of these rolls a day. Unloading, stacking, loading out; that's an average of a roll in less than four minutes during every 8-hour shift.

"It's the same job . . .

but now we save 'Parade' thousands of dollars"

General Public Warehouse Co., Inc., Philadelphia, Pa., uses Clark trucks to move and store almost anything—automobiles, cases of food, carpeting, cement, perish-

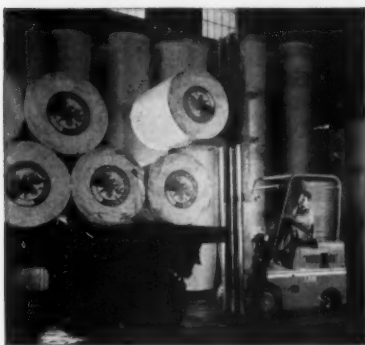
ables. Then there's the "paper job."

Two Clark trucks, equipped with roll clamps, move 260 tons of paper rolls a day for "Parade," the Sunday magazine supplement. Roll clamps eliminate core damage. Vertical stacking, instead of pyramiding, saves 25 per cent in warehouse space, 20 per cent in damaged rolls.

The result? General Public

Warehouse has passed on annual savings of thousands of dollars to its good customer, "Parade"—almost the full purchase price of a new Clark truck.

You may think you're doing the best handling job possible already. Why not make sure by calling your Clark dealer. He's as near as the "Yellow Pages" in your 'phone book, under "Trucks, Industrial."



CLARK[®]
EQUIPMENT

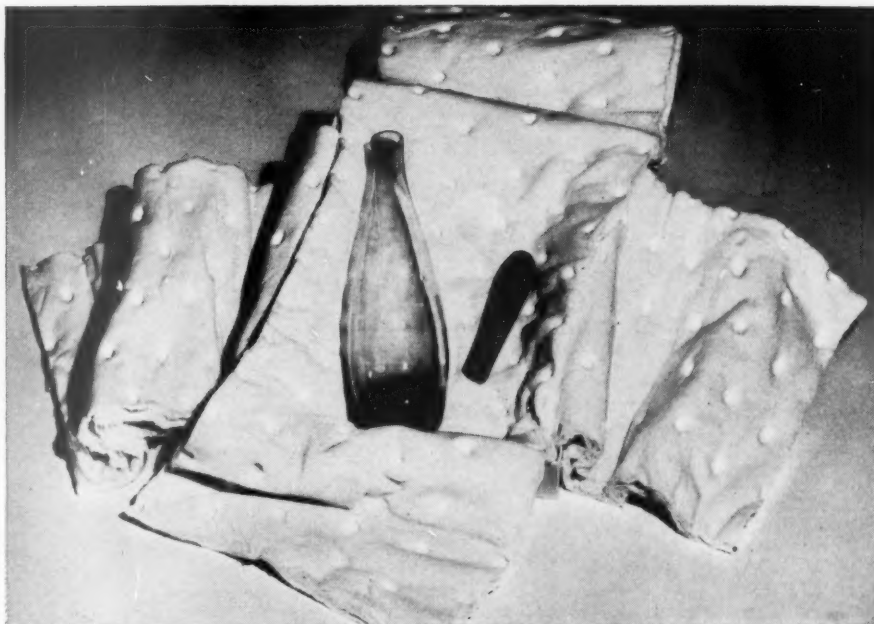
Industrial Truck Division

CLARK EQUIPMENT COMPANY

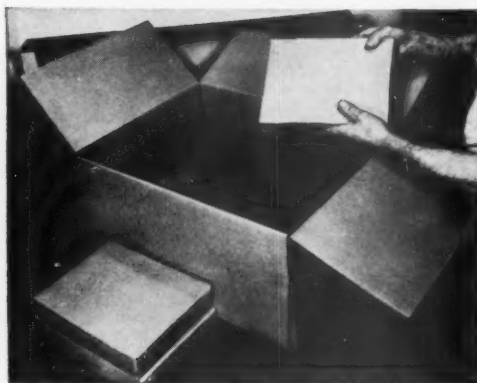
Battle Creek 201 Michigan

A BETTER BUY WITH LOCAL SUPPLY—*Genuine Clark Parts*

REPELLENT WADDING—The unique characteristics of Aquapel make it ideal for sizing grades like cellulosic cushioning materials, which have formerly presented difficult problems. A new concept in sizing, Aquapel reacts chemically with cellulose fibers to form a surface that is resistant to the penetration of water, acid, and alkali.



AQUAPEL® SOLVES THE TOUGHEST SIZING PROBLEMS



JUTE LINERS—Efficient sizing of alkaline jute liners for corrugated boxes has always been difficult to obtain. Now Aquapel makes it easy without sacrificing strength. A small amount of Aquapel provides a degree of resistance to moisture that keeps boxes looking better longer.

Impossible to size? If you haven't tried Aquapel, you haven't tried the new concept in sizing that makes the difficult look easy.

There are many good reasons for the Aquapel difference. To begin with, Aquapel is not just "another sizing agent." Neither resin nor wax, Aquapel is a chemical compound that becomes an integral part of the fiber. It is never just "stuck on."

Applied on the surface, Aquapel is also a lot more than a surface size in the usual sense. Any equipment commonly used for the surface treatment of paper can be used to apply Aquapel. And it takes only a little Aquapel to make a big difference.

If you haven't tried Aquapel, write Hercules for a sample and descriptive literature.

Paper Makers Chemical Department

HERCULES POWDER COMPANY

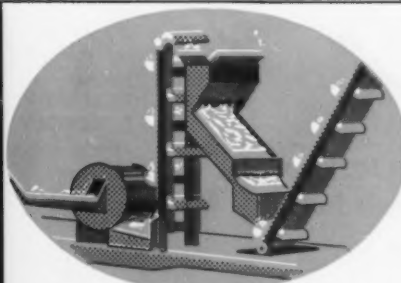
965 King Street, Wilmington 99, Del.

PP56-2



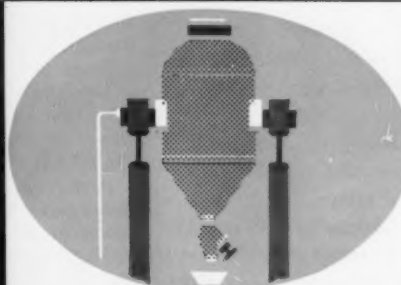
How stainless steel cuts operating costs *in everything from ...*

*...chips and
groundwood
processing ...*



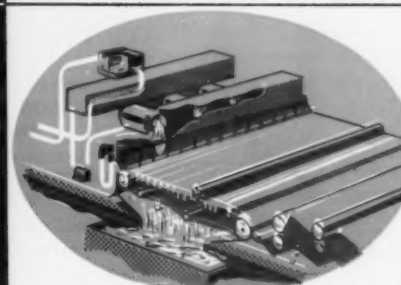
Corrosion resistance and chemical inertness of stainless mean cleanliness and freedom from iron pickup. Hoppers, hoods and stock lines last longer, need little cleaning, show exceptional stock flow characteristics.

*...to
sulphite
pulping ...*



Here, by corrosion resistance alone, stainless quickly pays for itself. Cuts costs still further by adding strength and wear resistance to everything from blow-pit target plates to false bottom screens ... digester circulating systems to heat exchangers.

*...to the
paper machine
itself!*



Strength, cleanability, corrosion resistance of stainless help cut slime, cleaning time and maintenance. Stainless screens, for example, are corrosion resistant ... free from contamination ... long lasting — with clean, accurate perforations and fast filtering characteristics.

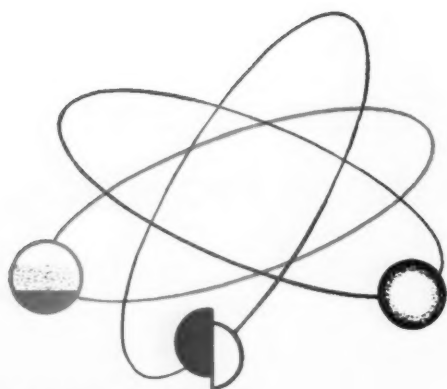
Whatever process you're concerned with, you can be sure the *right* stainless type will go a long way to cut your operating costs, boost production, increase product quality. Your Crucible representative will gladly help you in the selection, applica-

tion and fabrication of stainless steel. Ask him for a complimentary copy of "Making the Most of Stainless Steel in the Pulp and Paper Industry." Or write to *Crucible Steel Company of America, Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE

first name in special purpose steels

Crucible Steel Company of America

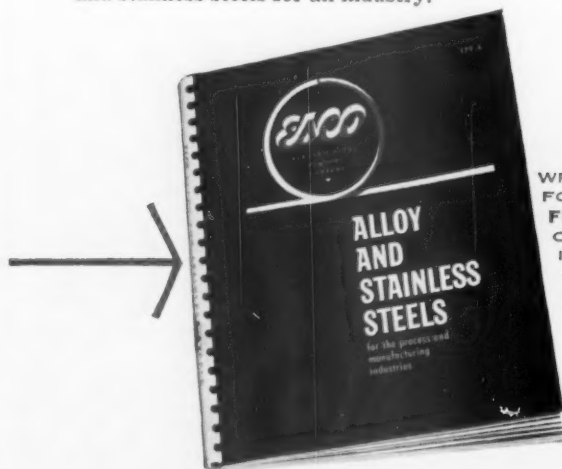


HERE'S YOUR
ESCO GUIDE TO
 COST REDUCTION
 in the use of stainless and alloy steels for the
 manufacturing and process industries

CORROSION • HEAT • IMPACT and ABRASION
 ... whatever the problem, processing, or manufacturing end products, this 100-page book will suggest new and better solutions which can mean immediate cost reductions, increased efficiency and often a superior process or product.

Over 47 pages of specifications, alloy chemical composition and physical properties and handy reference tables and charts on corrosion, heat and abrasion resistant alloys.

The only book of its kind. Here also is the latest information on static, shell molding and centrifugal casting of alloy and stainless steels for all industry.



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ELECTRIC STEEL FOUNDRY COMPANY
 Manufacturing Plants: 3167 N.W. 25th Ave., Portland 10, Oregon; 712 Porter Street, Danville, Illinois
 Other Offices and Warehouses: Los Angeles, California; San Francisco, Calif.; Seattle, Spokane, Washington; Salt Lake City, Utah; Honolulu, Hawaii; Centralia, Pa.; Houston, Texas; Eugene, Ore.; Hamilton, Ontario
 ESCO International—New York Office at 420 Lexington Ave., New York City; In Canada at Vancouver, B.C. and at Montreal, Quebec
 also Portland Manufacturing Plant

STRICTLY PERSONAL

MORE . . . NORTHEAST NOTES

that **ALBERT T. ARMITAGE** has been elected to board of directors. Mr. Armitage is also a director and chairman of the executive committee of Keyes Fibre Co. . . . **ARTHUR CRANE**, vice pres., Crane & Co., is new chairman of the Thin Paper Group of Writing Paper Mfrs. Assn. . . . **HUGH S. FERGUSON**, exec. vice pres. in charge of chemical group of W. R. Grace & Co., announces election of **GEORGE W. BLACKWOOD** as pres. and **WILLIAM L. TAGGART, JR.** as exec. vice pres. of Dewey and Almy Chemical Co. Division of Grace.

JAMES P. NOLAN, training manager of Oxford Paper Co., has been promoted to public relations asst., education under **TED SPEAR**, vice pres., public relations. **ELMO G. HALL** takes over as training manager. . . . **THOMAS GERACE**, pulp supt. of St. Regis mills in northern New York, takes on additional duties as assistant to **U. J. WESTBROOK**, mgr. of pulp production for all St. Regis pulp mills. **WALTER W. HANES** leaves Pensacola to be assistant to **ALEX SMALLEY**, vice pres. i/c labor relations.

JOSEPH S. HARVEY has been promoted from maintenance supt. to an assistant to the director of purchases of P. H. Glatfelter Co. He's been there 17 years. . . . **WILLIAM H. YOUNG**, a 19-year employe, moves up from yard supervisor to maintenance supt., and **CHARLES D. FINK** is upped from the yard dept. to yard supervisor. He has been with Glatfelter 9 years. . . . **PAUL WILKINSON**, supt. of paper mill div. of West Va. P&P Co.'s, Williamsburg, Pa. mill has retired after more than 46 years.

JOSEPH S. GLASING, formerly supt. of Russell mill of Westfield River Paper Co., Inc., was promoted to asst. to vice pres., mfg. **EDWIN A. VASSAR** has been named supt. of the Russell mill. Other changes announced by Pres. **PAUL F. MOORE** are **WATSON BEECHER**, to prod. mgr., and **WILLIAM H. GRIFFITHS** to production planning for the Pennsylvania operation. . . . **TUURE TENANDER** has returned to Crocker, Burbank, Inc. after spending 8 years with the U.S. State Department. . . . **CHARLES W. BODNAR** is now eastern district manager for St. Regis multiwall bag plants at Pensacola, Fla.; Franklin, Va.; Nazareth, Pa.; Toledo, O.; and Ponce, Puerto Rico. . . . **DR. ARTHUR N. PARRETT**, vice pres. in charge of research and development for Rayonier, Inc., has moved from Shelton, Wash., to executive offices in New York.

Continued on page 22

in a **HURRY**
for the *Best*
rubber covered roll ?

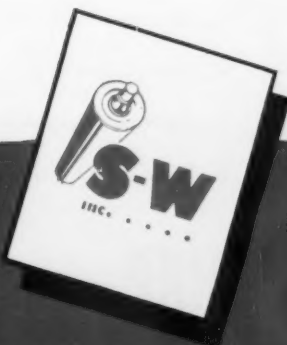


Stowe-Woodward Rubber Covered Rolls gather no moss in the making. The three plants where they are made are the world's most modern . . . designed to produce more rolls than any other . . . specifically equipped for the most efficient production of papermaking rolls.

For a special rush order, any of Stowe-Woodward's three plants is your best source. But with all this equipment, the intervals of **TIME** specified in the formula for your roll are just as important as the required amounts of rubber, sulphur, or any other ingredient. Short cuts which can possibly affect performance do not make "Rubber Rolls with a Reputation" and we don't believe any of you would risk an ounce of performance to gain a day.

Let's put it this way: Nobody can make a **GOOD** roll any faster than Stowe-Woodward can make the **BEST** roll . . . and Stowe-Woodward makes no other kind. Isn't that about the best reason in the world for buying Stowe-Woodward rolls?

"RUBBER ROLLS with a REPUTATION"



STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN — NEWTON 64, MASSACHUSETTS — GRIFFIN, GEORGIA

CHIPS DISSTON SAYS . . .

"Be a Sharp Buyer!"



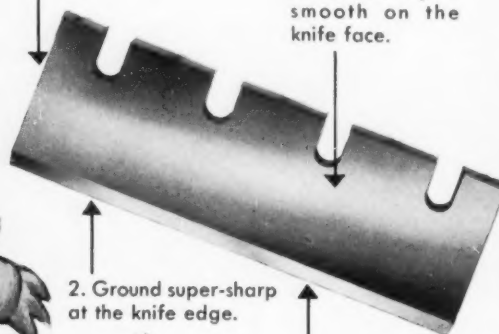
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1. Made of one solid piece of highest quality alloy steel.

3. Ground super-smooth on the knife face.

2. Ground super-sharp at the knife edge.

4. Specially heat-treated and tempered-hard and tough at the cutting edge; softer at slots to absorb shocks.



Check these 6 BIG advantages you get with Disston Chip-Master Chipper Knives

*Your nearby Disston distributor provides prompt service.
Ask him today about Disston Chip-Master Chipper Knives.*

1. Uniform chips
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3. Minimum sawdust
4. Long edge life
5. Fast re-sharpening
6. Low direct knife cost

Henry DISSTON DIVISION

H. K. Porter Company, Inc.
491 Tacony, Philadelphia 35, Pa.



BRIEFS

for caustic soda buyers

50% or 73%?

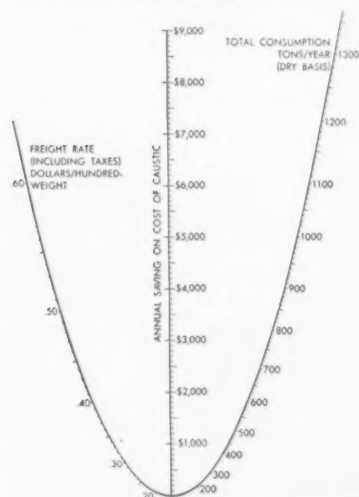
Choosing a supplier

New producing point

50% to 73%—

some save, some don't

To estimate quickly whether you can save by switching from 50% to 73% liquid caustic soda, simply draw a line on this nomograph.



Start at your freight rate and draw to your annual consumption in tons, dry basis. Your approximate savings on freight will appear where you intersect the center line.

From this figure, subtract annual depreciation for dilution equipment. (We'll be glad to advise you on cost of this equipment.)

If you still show a saving, it would be wise to consider the big switch seriously.

For more facts on the economics of 50% and 73% caustic, check the coupon for a copy of our pocket-size *Caustic Soda Buyer's Guide*.

And for specific technical advice centered on your requirements, just phone or write the nearest Hooker sales office.

Choosing a supplier

Service is a large part of what you pay for when you buy caustic soda.

Here are some important "service" points to look for when you're considering a source of supply. (As a Hooker customer, you enjoy *all* of them.)

1. Supply security. How flexible are your supply lines? For instance, a supplier with plants and stock points on deep water may be able to offer you a choice of rail or water delivery. This can assure you steady supply in case of rail service interruption.

2. Realistic contracting. Your agreements with your supplier should realistically reflect your expected needs *and* the supplier's ability to consistently deliver the tonnage you need. Best yardstick for measuring this ability is a supplier's performance record. Hooker, for example, has an unbroken 50-year record of fulfilling contract commitments.

3. Engineering help. A supplier's engineering staff can help you set up a new caustic handling system—or re-vamp an old one—with advice, and with actual design assistance.

4. Safety programs. The men in your plant who handle caustic soda can benefit from safety suggestions offered by your supplier. You should have on tap the latest in safety equipment, plus up-to-date information on the safe handling of caustic soda.

We'd be happy to enlarge on these points, with your caustic requirements in mind. A phone call or note to the nearest Hooker sales office will bring you the specifics.

New source

Put a pin just north of Vancouver, B.C., on your map of caustic soda supply points.

Here in the city of North Vancouver, early in 1957, a new \$11 million chlor-alkali plant will go on stream. At the plant's masthead will fly the colors of Hooker Chemicals, Ltd. The plant will be built and operated by Canadians, for industry in Canada.

The new Hooker plant will be Western Canada's first domestic source of caustic soda and chlorine. It will shorten supply lines, provide small but real freight savings, eliminate the need to pay duties on caustic and chlorine, and make for faster service.

If your company is already operating plants in British Columbia, or plans to build in this great, growing territory, this is a good time to discover how Hooker Chemicals, Ltd., can serve you.

Check items you'd like to receive:

☐ *Caustic Soda Buyer's Guide.* Lists advantages of 50% and 73% solutions; comparative costs; capacities of tank cars and other containers; useful shipping information.

☐ Technical data on caustic soda.

Need information on these other Hooker products used in the pulp and paper industry? Check here for technical data sheets:

☐ Chlorine, liquid
☐ Muriatic Acid
☐ Sodium Sulfide
☐ Sodium Sulfhydryte

Clip and mail to us with your name, title, company address.



6-165

From the Salt of the Earth

HOOKER ELECTROCHEMICAL COMPANY

2 UNION STREET, NIAGARA FALLS, N. Y.

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES

MORE . . . NORTHEAST NOTES

HARRISON J. DAYSH is new industrial relations secretary of APPA, according to **TED TINKER**, exec. secy. He succeeds **GEORGE V. JOHNSON**, now secy.-treas. of Specialty Paper and Board Affiliates. Mr. Daysh is a grad of Yale and Georgetown U. Law School, is married and has two children. . . . **LEW R. AYERS** and **HAROLD E. BRAKEWOOD** are now directors of product control for two folding carton division plants of Robert Gair Co. Inc. Mr. Ayers will coordinate quality and product control activities at Gair's Piermont, N.Y. plant and Mr. Brakewood will do the same at the Elkhart, Ind. plant of the ACM division.

GENERAL ANTHONY C. McAULIFFE is joining American Cyanamid as head of newly created engineering and construction division, and will be president of engineering subsidiary, Chemical Construction Corp. . . . **GEORGE W. RUSSELL** was named gen. mgr. and **ALDEN R. LOOSLI**, asst. gen. mgr. of Cyanamid's industrial chemicals division. . . . **STUART W. SKOWBO**, vice pres. and treas. of

Brown Co., is now senior vice pres. and treasurer, and will be the senior officer of the company resident in Berlin. **F. X. GUIMOND** has been named manager of pulp manufacturing. He was formerly with Canadian IP at Temiskaming, and Gatineau, Que., Quebec North Shore Paper Co. and Restigouche Co.

GEORGE L. BROWN has been elected to new post of vice pres. for purchasing, F. C. Huyck & Sons. . . . **WILLARD J. DIXON** has retired as vice pres., St. Regis Paper Co. He will continue as a director and consultant. He joined St. Regis in 1929 when they acquired the Bates Valve Bag Co. of which he was secretary, treasurer and a director. He has an L.L.B. from Northwestern U.; is a member of the APPA board of governors, president of Paper Shipping Sack Mfrs. Assn., and was president of Kraft Paper Mfrs. Assn. during WWII.

GIBSON P. STOUCK, former exec. asst. to vice pres. New York & Penn. Co., is manager of its new Lock Haven Div., according to **V. M. STOUCK**, vice pres. and gen. mgr. **HERBERT C. CHURCH**, former tech. asst. to vice



In Industry News

WALTER LAWRENCE (left) is now Sales Rep for Stora Kopparberg Corp., headquartering in New York and covering Eastern and Lake States. He was with Soundview Pulp Co. for many years, as mgr. of Chicago sales office.

HENRY A. GRABOWSKI (right) heads new post of Plant Mgr. in Madison, Me., for Scott Paper. Scott recently set up this mill as separate operating unit under own plant management.

pres., is now gen. supt. of the division. Changes were made when company combined all manufacturing activities in Lock Haven into one administrative unit.

Flashes from Far West

WILLIAM A. KINNEY, plant manager of Flintkote Co., Pioneer Div., San Leandro, Calif., has been elected president of San Leandro Chamber of Commerce. Mr. Kinney is entering his second year on the C. of C. board of directors.

. . . **JAN HAUGEKOD** has retired as sulfite mill supt. at CZ West Linn mill. He was supt. there for 26 years and was also employed in Norwegian, Canadian and Wisconsin sulfite mills. He attended a technical college in Norway and also in Darmstadt, Germany. . . . **GEORGE B. LEIGHNINGER** has been named manager of Stein, Hall & Co.'s Los Angeles branch office. He's a grad of Northwestern U and joined S-H in 1948 as a sales trainee.

BRIAN L. SHERA, a U. of Washington grad in chemical engineering, has been appointed asst. sales mgr., Pennsylvania Salt Mfg. Co., according to **FRED C. SHANAMAN**, president. He's been with Pennsalt 20 years and will continue to direct their Washington technical services but has been assigned greater responsibilities in agricultural chemicals as well as industrial chemicals.

. . . **CLARK S. JOHNSON**, West Coast district sales manager, kraft div., St. Regis Paper Co., has moved his office from Los Angeles to the new San Francisco office in the Russ Bldg., 235 Montgomery St.

C. V. GREGORY, manager of district sales for Reliance Electric & Engrg., of Cleveland, toured West Coast mills recently with **ANDY PERRIN**, Coast sales rep. who makes his headquarters in California. Andy's new office is in the re-

Continued on page 26

Greater Production of Higher Quality Pulp

- in Less Time
- at Lower Cost

This is the end result of the various processes and equipment which we have installed in pulp mills throughout North America. Send us details of your requirements.

Chemipulp Process Inc.

Woolworth Bldg. Watertown, N. Y.

Associated with

Chemipulp Process Ltd., 403 Crescent Bldg., Montreal

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Orpheum Bldg., Seattle

Lundberg-Ahlen Equipment Ltd.
146 E. Broadway, Vancouver



Solves Your Shower Pipe Problems

**In Mill After Mill EMERSON SHOWER PIPES are
Giving Trouble-Free Service in White Water Systems**

Three exclusive, hidden features, all working together, make it possible for EMERSON SHOWER PIPES to perform with equal efficiency in systems using recirculated, process water containing solids and in systems using fresh water. This leads to real operating economies from **lower water treatment costs, fewer wells and smaller filter installations.**

Complete spray coverage of constant, uniform pressure is provided by replaceable nozzles ① threaded and soldered into the pipe. Clean orifices are maintained by the sweeping action of the brushes ② located in the cleaner rod directly in line with the orifices. As the rod handle is turned back and forth,

the brushes, guided by grooves in the under side of the nozzle, clean the orifices with the simultaneous opening of the flush valve ③. Through the resulting flushing and cleaning action, all foreign substances are removed the entire length of the pipe. When the brushes are set free of the orifices, the flush valve closes for continued spraying action.

You'll be amazed how installations of EMERSON SHOWER PIPES can handle white water and effect important economies in your mill. Send today for completely descriptive technical bulletin on EMERSON SHOWER PIPES.



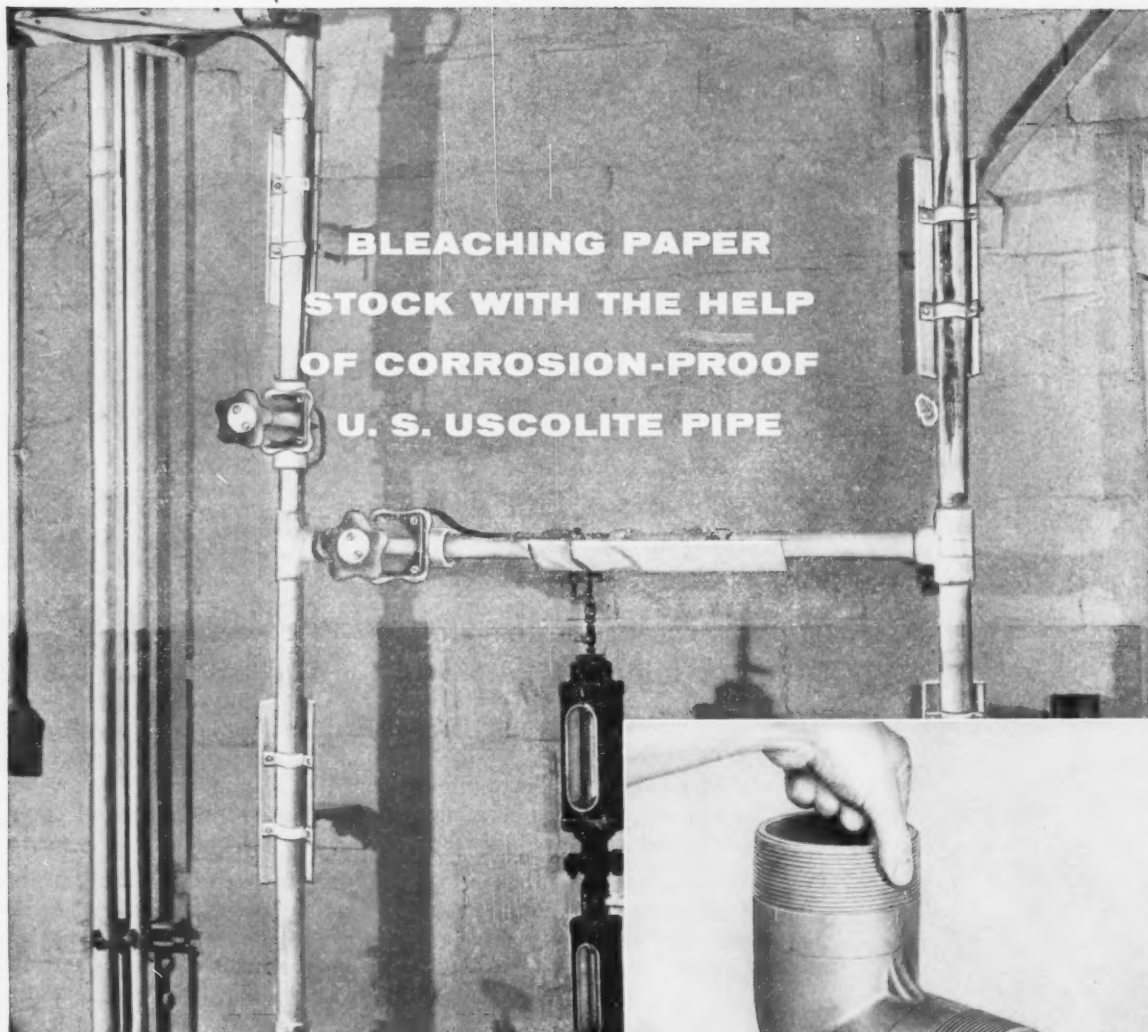
BOLTON EMERSON

**THE EMERSON MANUFACTURING COMPANY, DIVISION
John W. BOLTON & Sons, Inc. Lawrence, Massachusetts, U. S. A.**

Canadian Representatives: PULP AND PAPER MILL ACCESSORIES, LTD., Montreal, P. Q.

Foreign Representatives: UNITED STATES MACHINERY CO., INC., 90 Broad Street, New York 4, N. Y.





Milk of lime rotameter, used in the control of the pH of the stock in a double-shaft mixer. The piping is U. S. Uscolite with Uscolite (Hills-McCanna) valves.

The paper mill, located in Pennsylvania, selected U. S. Uscolite® plastic pipe because it's immune to the corrosive chemicals used in the bleaching process, and requires *no up-keep*. The piping previously used just couldn't stand the gaff.

Made by United States Rubber Company, Uscolite is an extremely tough but lightweight thermoplastic pipe. It imparts no odor, taste or discoloration. It is threaded and assembled with ordinary piping tools—*without* special preparation. Uscolite is in use in thousands of installations in every industry where constant control of chemicals, acids or corrosion is a problem.



Uscolite pipe and fittings are made in the broadest and largest line of stock sizes on the market. Sizes run from 1/2" to 6".

For replacement or completely new piping, get in touch with any of our selected distributors or any of the 27 "U.S." District Sales Offices or write us at Rockefeller Center, New York 20, N. Y. Immediate delivery of standard sizes and threaded fittings. The Hills-McCanna Uscolite valve is available for your piping assembly.



Mechanical Goods Division

United States Rubber

*Multiple bleaching
of PUGET PULP*



Converting mills use

PUGET PULP

**in the manufacture of paper for direct
mail advertising**

PUGET PULP is bleached sulphite—clean and clear enough
for the finest product, strong enough for the hardest use.

PUGET PULP is produced in steadily expanding amount in
one of the most scientifically up-to-date mills in America.

PUGET PULP is made expressly for the market. Converting
mill users are assured of a steady supply from a single non-
competitive source.

Gear your operations to PUGET PULP.

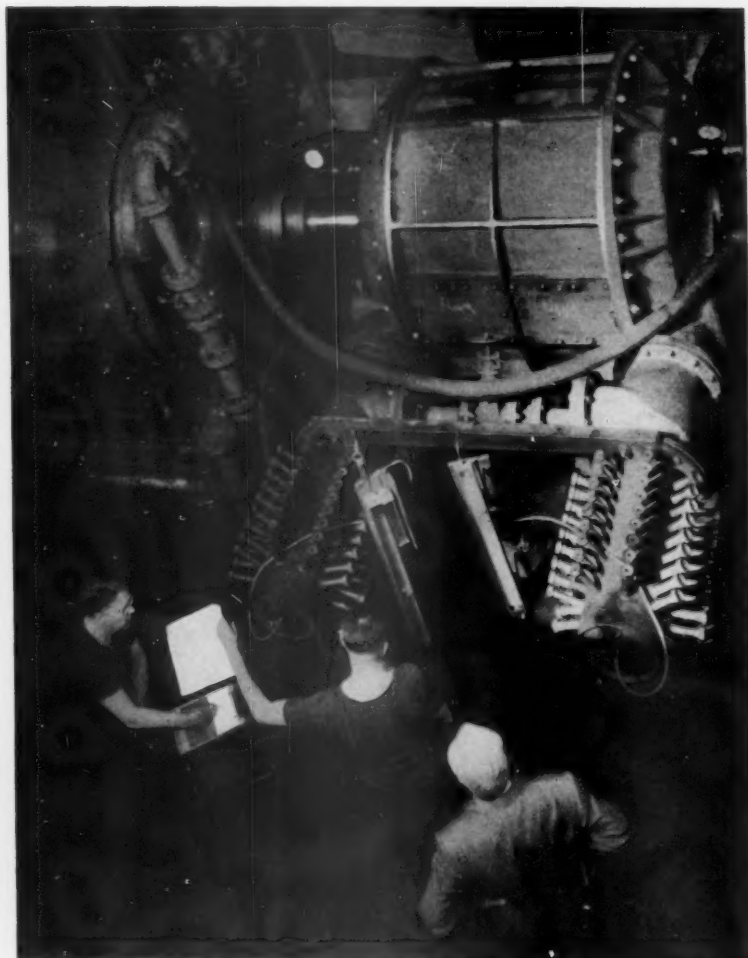


*With output now exceeding 450 tons daily, more
PUGET PULP is available for the market*

**PUGET SOUND PULP
AND TIMBER COMPANY**

BELLINGHAM • WASHINGTON

Rated performance of every Nash Vacuum Pump is assured by this precise laboratory test



Rated capacities of Nash Vacuum Pumps are not theoretical. Every Nash Pump is tested individually. Air capacity is determined by delivery thru accurately machined and calibrated orifices. Related vacuum is measured by precise mercury column, and horse power is recorded electro-dynamically. Records of these tests are retained by us, and certified copies are available to Nash Pump owners.

That is one of the reasons why Nash Vacuum Pumps are installed in over a thousand leading Paper Mills. An engineer from Nash will be glad to survey your mill, and make recommendations, entirely without obligation to you.

NASH ENGINEERING COMPANY

440 WILSON ROAD, SO. NORWALK, CONN.

STRICTLY PERSONAL



Promotes Chem Engineers

(l to r): PETER WILKIE, Asst. Kraft Mill Supt. of Crown Z Camas, Wash., mill, transferred to Elk Falls, B. C., Crown Z Canada, as Kraft Mill Supt.; MAX CUSTIS, formerly Kraft Mill Shift Foreman, promoted to Asst. Kraft Mill Supt.; JOHN GRIFFITH became Kraft Mill Shift Foreman.

MORE . . . FAR WEST FLASHES

cently built assembly plant at 1525 Adrian Rd., Burlingame. . . . JOHN B. GILBERT, formerly general sales manager, has been named vice president of Zellerbach Paper Co. . . . WALTER R. McWATERS, Portland div. manager Z, is a new director.

WILLIAM F. CYRUS, CZ West Linn, received in-plant promotion to technical asst. to coated paper supt. . . . JOHN W. TILDEN becomes CZ Antioch purchasing supervisor in transfer-promotion from West Linn. . . . WALTER C. GEORGE, research & development director of CZ Gaylord divis., recently lectured on packaging and shipping fresh produce at Michigan State U. . . . IRA C. KELLER, president of Western Kraft Corp., Portland, and Mrs. Keller have gone to Hawaii for late-winter vacation. . . . W. O. HISEY, vice president of Western Kraft Corp., Albany (Ore.), went from Paper Week to the Caribbean island of Grand Cayman, with Mrs. Hisey.

N. J. JOHNSON, gen. mgr. of Griffith Rubber Mills, Portland, Ore., announces promotion of ZINA A. WISE JR. to head up the firm's pulp and paper mill sales. . . . PETER S. GREENWOOD, chief forester of West Tacoma Newsprint Co., has affiliated with Columbia Lumber Co. of Alaska as manager of timber division at Juneau.

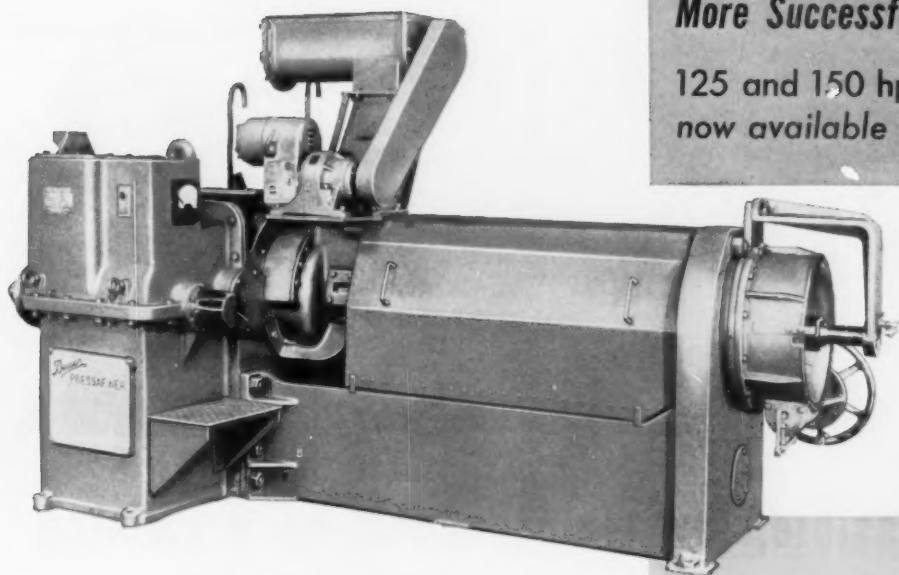
SIDNEY S. MOORE, chief engineer of Ray Smythe Co., Portland, Ore., and Mrs. Moore became the parents of a daughter, Rebecca Anne, March 2. This is their fourth child, the others all boys. . . . ROBERT SMYTHE, of Ray Smythe Co., Portland, Ore., attended the recent national conference of Heppenstall Co. sales agents at Indianapolis, where the company has opened its new ring rolling-forgings-die block plant. About 160 sales agents and executives attended the 2-day session.

**A BOON TO
SEMI-CHEMICAL
and HIGH YIELD
OPERATIONS**

***Pressafiners
HAVE GROWN UP—***

***New Features
Better Results
More Successful Installations***

***125 and 150 hp Models
now available***



THE BAUER BROS. CO.
DISC REFINER HEADQUARTERS
1706 SHERIDAN AVE. • SPRINGFIELD, OHIO

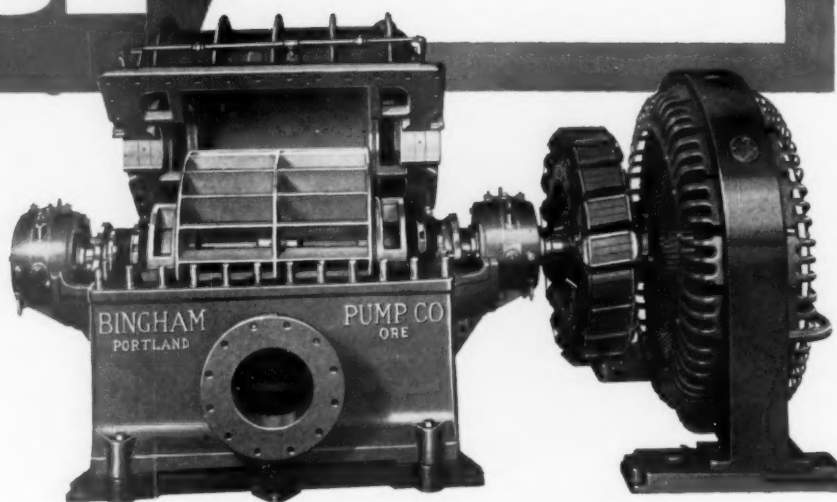
- Pressafiners have doubled in size and capacity since their introduction.
- Now 8½" diameter barrel is standard —giving better drainage, more capacity, and lower power inputs.
- Better pulp quality, improved end-product appearance, fewer shives, and lighter color, with less maintenance, are results of using Bauer Pressafiners.
- By expressing cooking liquors in highly concentrated form, stream pollution problems can be solved.
- Pressafiners have saved up to 50% of disc mill refining power. Power saving gives added capacity in refiners.
- More than fifteen Pressafiners have proved their worth in highly successful commercial installations.

The excellent co-operation of Green Bay Paper & Pulp Co. has made the development of this machine possible, giving the industry higher quality end-products at lower costs. For more details, contact us.

THE *Bingham* SPLIT CASE

**makes the BIG
difference in
Vacuum Pumps**

- Quiet operation—
no drumming
- Only one moving part
- No contact between
inner working parts
- Less floor space required

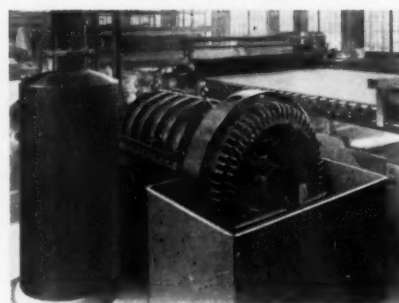


easily accessible, low maintenance, no drumming

Bingham Vacuum Pumps offer operating advantages that are possible *only* with the horizontally split case, an exclusive Bingham feature.

The horizontally split case, permitting removal of top half, makes it easy to inspect or remove rotating element as a unit, in minimum floor space, and without disturbing suction and discharge piping connections.

Write your nearest Bingham office for further information, or give details of your operation. Bingham engineers will be glad to make recommendations with no obligation on your part.



One of several Bingham split case, double suction, vacuum pumps in Weyerhaeuser's pulp mill, Everett, Washington.

***Bingham* PUMPS**
SINCE 1921

BINGHAM PUMP COMPANY

General Offices: 2800 N.W. Front Avenue, Portland 10, Oregon
Factories: Portland, Ore. • Vancouver, B.C., Canada



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STEPLESS CAPACITY-BALANCING ELIMINATES STANDARDIZING!



DYNALOG'S EXCLUSIVE BALANCING ACTION

- no slidewire
- no batteries
- no standardizing
- no gears, cables, etc.
- no high-speed reversing motor

Here's the potentiometer that's *never* "off process" for standardizing. It requires none! The Dynalog's advanced, stepless-balancing design eliminates dry cell, provides *direct, uninterrupted* evaluation of the measured variable with sustained high accuracy.

Dynalog* design eliminates slidewire maintenance and motor servicing too! A simple, variable capacitor and positive magnetic drive provide smooth, continuous balancing action . . . instant response

without wear. There are no fast-moving parts . . . no gears, cables, or complicated mechanisms. Only five moving parts, including the recording pen!

Dynalog Instruments are available for use with resistance, voltage, capacity, or inductive type primary elements to measure and/or control any process variable. For complete details, write for Bulletin 427. The Foxboro Company, 994 Neponset Ave., Foxboro, Mass., U.S.A.

*Reg. U. S. Pat. Off.

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ELECTRONIC  INSTRUMENTS



TRUSCON LABORATORIES
 1700 Caniff, Dept. Y-8, Detroit 11, Michigan

☐ Arrange field demonstration in my plant without obligation.
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ASSURE PROTECTION OF ALL SURFACES IN YOUR PLANT AREA! USE FIELD DEMONSTRATIONS!

BUILD UP MAINTENANCE SAVINGS BY CONTROLLING CORROSION OF IRON AND STEEL AND MASONRY DETERIORATION WITH PROPER PAINT COATINGS!

"On the Spot" demonstrations can insure selection of materials best suited to withstand the chemical or other destructive conditions that can prevail in various parts of *your* plant.

With no obligation to you, Truscon Specialists will assist you in selecting coatings and methods of application, each with a record of economy proven by performance. Get proof under *your* exposure

conditions by an actual field test.

Truscon Laboratories, specialists in industrial and building maintenance, have been helping to solve waterproofing, floor and painting problems for nearly 50 years and are internationally famous in the field. Act now! Use the handy coupon above. Take advantage of this important service.



STRICTLY PERSONAL

Column from Canada

BEN STIDWELL, Cornwall-born engineer, has been named asst. prod. mgr. of Cornwall division, Howard Smith Paper Mills in Ontario. He graduated from Queen's Univ., has been with Howard Smith throughout his career. . . . New instrumentation engineer at Cornwall is **JIM DYKES**, former Winnipeg with Canada Paper Co. at Windsor Mills, Que., before joining the Ontario operation. . . . **HAROLD DeWOLFE** is the company's new supt. of services. New Brunswick-born, he graduated from Univ. of Maine with m.e., joined Howard Smith organization in 1942.

TED CROSBY, Bing's eldest brother, is in B.C. heading the rain-making team that is trying to build up water supply at Linke Lake, source of power for Crown Zellerbach's Pacific Mills operations at Ocean Falls. . . . **HUGH HODGINS**, Vancouver consulting forester, and his associates are conducting investigations looking toward expansion of Australian Newsprint Mills, Ltd., in Tasmania. They have also been engaged to make a specific forest survey for Sandwell & Co., Vancouver consulting engineers, in connection with the Pakistan Industrial Development Corp., associated with the Pakistan paper mill. **HELMUT SWANTJE** represents Mr. Hodgins in that project. **GORDON JONES** and **KJELL HOEL** are already at the site of the mill.

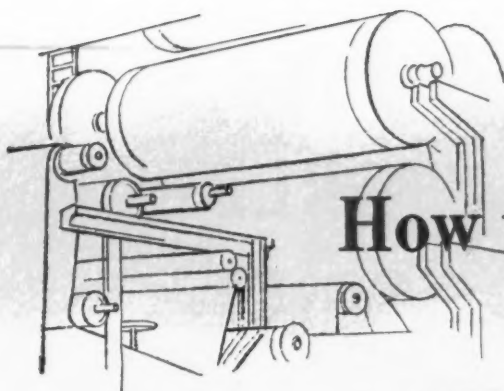
JOHN R. KIMBERLY has been elected pres. of Spruce Falls Power & Paper Co., succeeding **CHARLES H. SAGE**, recently retired.



New Posts in Canada

J. D. HASKELL, (left) is elected new Pres. of Black-Clawson (Canada) Ltd., Montreal, which continues under general managership of E. M. Root. Mr. Haskell is also a Vice Pres. of the parent Black-Clawson Co.

ALEX H. HAY (right), with Powell River Co. 9 years, has been appointed to industrial engineering dept. During the war he supervised airfield construction in Manitoba and conducted surveys for the Canadian government and Imperial Oil Ltd.



How this Paper Mill

made ONE drum of defoamer



do the work of TWO



The efforts of the Nopco technical service men do not always stop with supplying effective defoamers at competitive prices. Very often their wide experience with all types of pulp and paper mills can suggest money-saving ways of using these defoamers.

☆ ☆ ☆

In one well known mill, for instance, the Nopco technical man was able to bring about important savings with his practical suggestions for improving both the handling and distributing of the defoamer to the points of use.

The result: at the year's end this mill found they had cut their defoamer consumption exactly in half, at a clear saving of \$6000 a year!

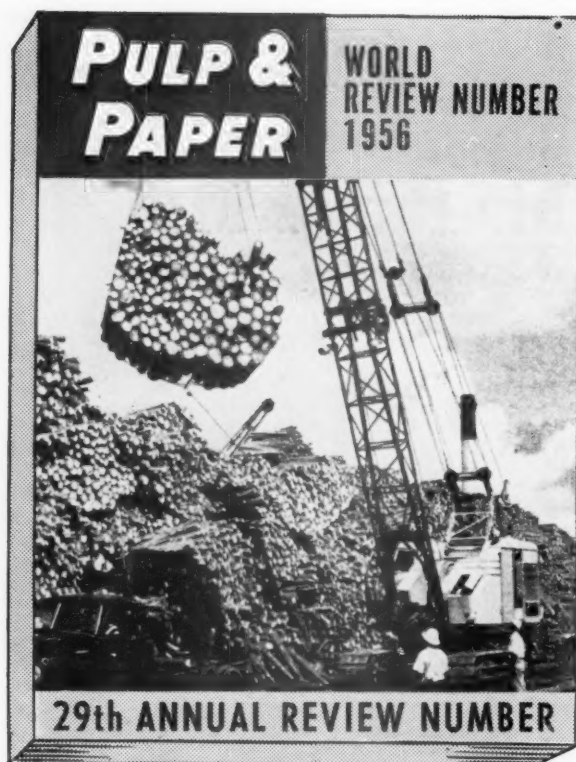
Nopco, pioneer in paper chemicals, knows well that paper and pulp mills vary so widely in their operating conditions that no one defoamer will work equally well for all. By proper selection from our Nopco KF* Series of paste defoamers, or our Nopco LD* Series of liquid defoamers, we are confident there is one defoamer which will produce foam-free paper at high speeds for *your* mill. Why not give the Nopco paper specialist the chance to study your operation carefully and make recommendations? His experience may quite possibly show you an extra saving like the one cited here.

Nopco Chemical Co., 316 Water St., Harrison, N. J.

*Reg. U.S. Pat. Off.

NOPCO

PLANTS: Harrison, N. J. • Cedartown, Ga. • Richmond, Calif.



1956 WORLD REVIEW NUMBER

for World Leadership
for Year-round Readership

PULP & PAPER'S 13th ISSUE
PUBLISHED IN JULY . . .

BE SURE TO INCLUDE THIS
ISSUE IN YOUR 1956 SCHEDULES

When planning your advertising for 1956, be sure to order space in the "World Review Number" of PULP & PAPER. World-wide interest in this special number, plus an established reputation as a statistical authority for the industry, account for its high impact, year-around readership. Regardless of your schedule in the monthly issues of PULP & PAPER, advertising in the "World Review Number" will add extra impact to your sales program.

THE WORLD REVIEW NUMBER

The "World Review Number" is a regular 13th issue of PULP & PAPER, published in July and in addition to twelve regular monthly issues. It is received by all subscribers to PULP & PAPER and regular rates apply. Advertising in it is often planned as a 13th, 7th or single issue insertion.

WORLD REVIEW HIGHLIGHTS

• COMPLETE WORLD PULP STORY

. . . including *World Pulp Map*, showing flow of market pulp during 1955; *World Pulp Review*, showing trends and predicting what's ahead; *Story of Non-Paper Pulps*, covering textile and plastics uses; and exclusive *World Market Woodpulp Directory*.

• DOMESTIC SUMMARY

. . . a review of the year in the United States and including complete statistical tables on the pulp and paper industry, woodpulp and pulpwood.

• CANADIAN SECTION

. . . a review of activities of our North American neighbors in manufacture of its most important commodity—pulp.

• FOREIGN SUMMARIES

. . . the story of pulp and paper production and consumption in each of the important producing and consuming countries of the world.

• STATISTICAL REVIEW

. . . this contains statistical tables covering every item of activity in pulp and paper production.

PULP & PAPER

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Impco chlorine dioxide bleach system



POSITIVE MOVEMENT OF HIGH DENSITY PULP —
with Impco Thick Stock Pump!

PREMIXING OF ClO_2 WITH PULP UNDER PRESSURE —
results in quick intimate mix!

AIR-FREE PULP IN TOWER —
means more pounds of pulp per cubic foot!

DOWN-FLOW TOWER —
allows variable retention and pinpoint control!

EFFECTIVE NEUTRALIZATION AT BASE OF TOWER —
means minimum corrosion problems!

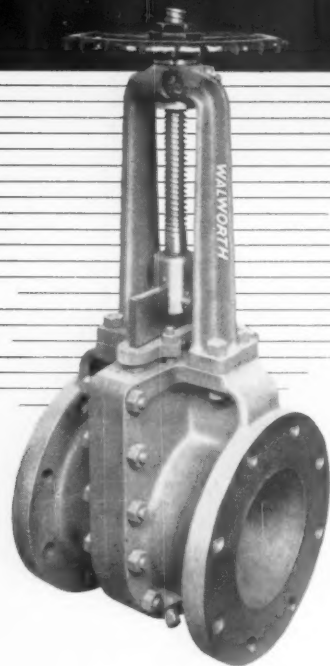
**THIS SYSTEM IS PRODUCING OVER 10,000 TONS
OF HIGH BRIGHTNESS QUALITY PULP PER DAY!**



**IMPROVED
MACHINERY, INC.
NASHUA • NEW HAMPSHIRE**

Sherbrooke Machineries Limited, Sherbrooke, Quebec manufacture similar equipment in Canada

Complete lines of **WALWORTH** Valves for **PULP and PAPER MILL SERVICE**



Featuring the No. 757F Pulp Stock Valve!

Here's the valve that was developed especially for clogproof operation on stock lines. There are no recesses where pulp fibers can accumulate. Circular ports permit full flow. The sharp, flame-hardened edge of the semicircular stainless steel gate shears through the pulp stock to a tight, leakproof shutoff.

The No. 757F can be supplied in sizes 4" to 24" inclusive — in All Bronze, Iron Body with Bronze Trim, Iron Body with Stainless Steel Trim, All Stainless Steel construction. Complete information is available from your nearby Walworth Distributor — or — write Walworth direct for a free copy of the booklet, "Walworth Valves for Pulp and Paper Mill Service".

and including these valves for "across-the-board" use!



WALWORTH BRONZE VALVES. These standardized lines of bronze valves provide an unsurpassed system of interchangeability of parts. Drastically reduces inventory problems.



WALWORTH PRESSURE-SEAL CAST STEEL VALVES. Ideal for high-pressure, high-temperature steam and boiler feed service. Internal line pressure is utilized to maintain a tight, leakproof body-to-bonnet connection, reducing bulk and weight of valve.



WALWORTH No. 716 NI-RESIST SADDLE STYLE GATE VALVE. The OS&Y design prevents the fluid in the line from coming in contact with the stem threads. This design meets the requirement for a line of valves in small sizes for pulp and paper mill service.



WALWORTH No. 725F5 OS&Y, FLANGED, SPECIAL ALLOY WEDGE GATE VALVES. Designed especially to retard caustic corrosion in the pulp and paper industry.



WALWORTH 928F5 SPECIAL ALLOY SWING CHECK VALVES. Designed for the severe corrosive services encountered in the pulp and paper industry.



WALWORTH LUBRICATED PLUG VALVES. Easy turning — quick operating. Lubricant can be renewed while the valve is in service. Lubricant completely surrounds the plug ports assuring a tight seal against leaks.

WALWORTH also offers Plastic Valves and Fittings, and Walseal® Valves and Fittings. Walseal products have factory-inserted rings of silver-brazing alloy in threadless ports.

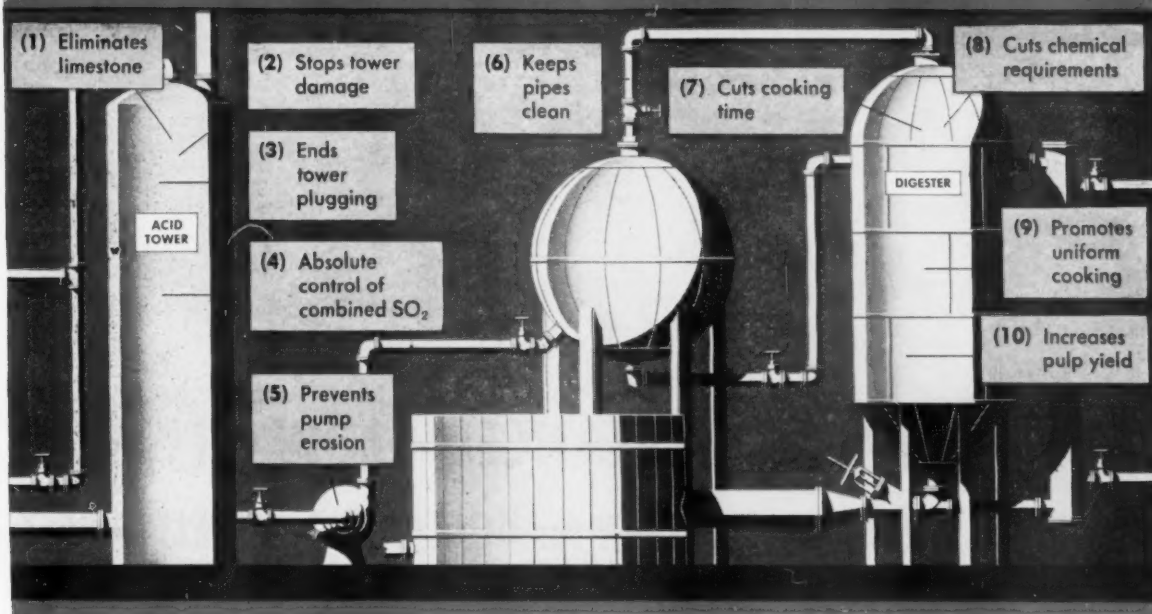
WALWORTH

Pulp and Paper Mill Division
60 East 42nd Street, New York 17, N. Y.

Walworth Company of Canada, Ltd., Toronto

**DISTRIBUTORS IN PRINCIPAL CENTERS
THROUGHOUT THE WORLD**

10 Ways Ammonium Bisulphite Pulping Can Help Increase Your Pulp Mill Profits:



Here's how Spencer Anhydrous Ammonia saves time, cuts costs and increases yields. Read how this quicker, cleaner, better method of pulping can benefit your mill:

It is generally agreed that ammonium bisulphite pulping offers many advantages. Ten of these advantages are shown above. Now, let's look at what some of these advantages can mean to you:

In the first place, Spencer Anhydrous Ammonia ends the need for stone handling. This reduces labor costs and, at the same time, stops damage formerly caused by dumping stone into the acid tower.

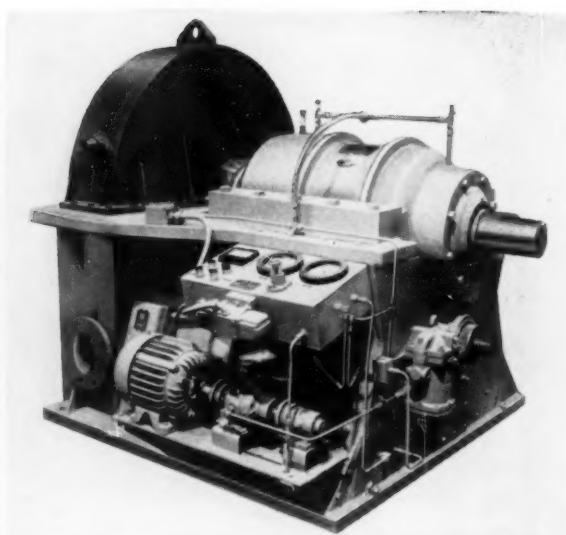
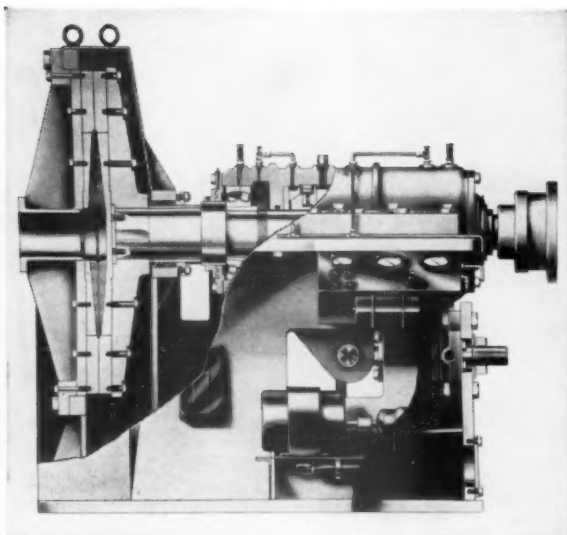
Pipes are cleaned, not clogged, by ammonium bisulphite acid. With ammonia base, absolute control of combined SO_2 is accomplished by the mere twist of a valve.

Ammonia cooking liquor penetrates more rapidly, allowing shorter cooking cycles, lower temperatures and more uniform operation. Pulp yield per cord of wood is increased, and chemical requirements are decreased. Also, ammonium bisulphite is adaptable to the pulping of hardwoods.

Why not set up a test run, and prove in your own plant the benefits of this pulping process? Our Technical Service Staff will be glad to provide you with technical assistance. Just write: Technical Service Section, Spencer Chemical Company, Dwight Building, Kansas City 5, Missouri.



AMERICA'S GROWING NAME IN CHEMICALS



THE SUTHERLAND BALANCED FLOW REFINER*

POUND for POUND and DOLLAR for DOLLAR—the WORLD'S BEST

Advantages of the Sutherland Balanced Flow Refiner may be summarized as follows:

Consistent Stock Quality is maintained by the constant pressure applied through the hydraulic control system. The single rotating disk with its simple adjustment allows the operator to apply the exact amount of power required and to maintain a uniform power load.

High Stock Quality is maintained through the Balanced Flow Principle. A check ring at the periphery of the disks maintains a steady flow of pulp between the disks—the only area where effective refining action occurs.

Low Installation Costs are realized through

simplified designs and the ease with which the Balanced Flow Refiner is placed in service.

Low Operating Costs are realized by the ease of maintenance, long disk life and quick disk changes when needed. For example, there is only one packing gland, and that is readily accessible.

The new refiner has been on test on southern kraft pulp since early December on grades ranging from 30# paper to 33# board. It has demonstrated marked capabilities both for high capacity and low power consumption. Operators have found it simple to operate and results can be readily reproduced by merely resetting the refiner to the same pressures and power.

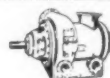
The Sutherland Balanced Flow Refiner is establishing new standards of quality and economy for the pulp and paper industry. Write today for the new Sutherland brochure with full details.

*Patents Pending

S-602

SUTHERLAND

REFINER CORPORATION
TRENTON 2, NEW JERSEY



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... a partner
for progress



For more than 25 years,
J. F. Pritchard & Co. has
been serving industries closely
related to the pulp and paper
industry with design,
engineering and construction
services. Pritchard also makes
available its services to the
pulp and paper industry.

Pritchard has the men, the
methods and the experience to
help you with your next
expansion or modernization or
new plant project. There's a
lot of solid assurance to you
of a successful installation
when you first say, "Let's
consult Pritchard!"

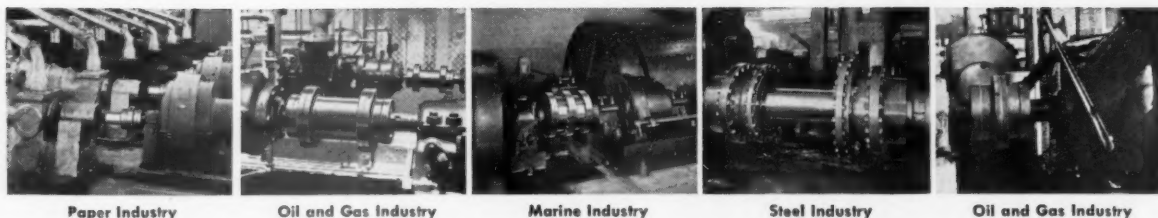


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SERVING THE
GAS, POWER,
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CHEMICAL, PULP,
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ENGINEERS • CONSTRUCTORS

4625 Roanoke Parkway, Kansas City 12, Mo.



Paper Industry

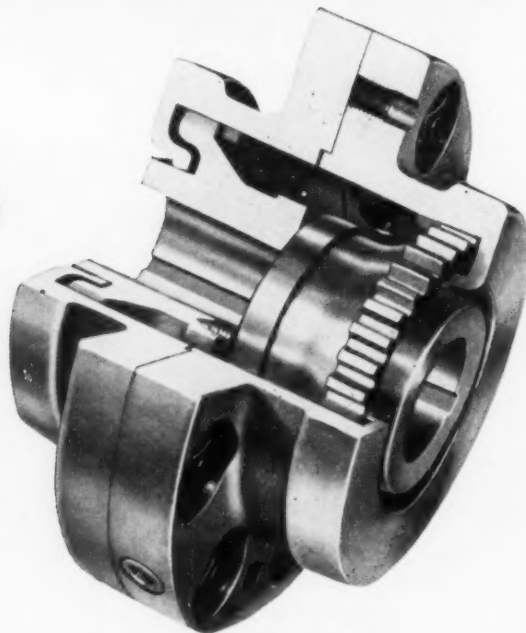
Oil and Gas Industry

Marine Industry

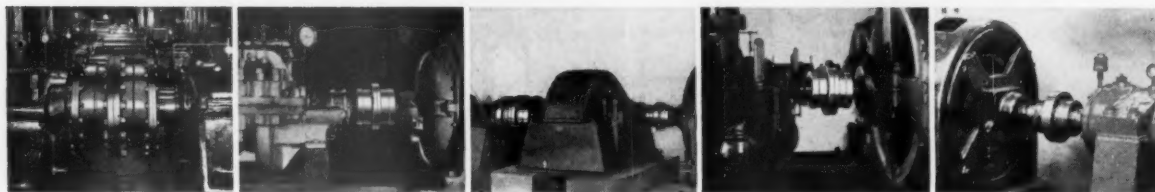
Steel Industry

Oil and Gas Industry

Why have Fast's Couplings always been the leader in the rugged paper industry?



Why are they used so widely to couple machinery in Power Generation, Pulp and Paper, Oil and Gas, Marine Propulsion and Auxiliaries, Steel and industry in general?



Steel Industry

Power Industry

Lumber Industry

Chemical Industry

Paper Industry

Fast's Couplings are standard equipment with more machinery manufacturers than any shaft coupling on the American market. Many Fast's Couplings in use over 30 years still show no signs of wear when disassembled! That's the answer: they're reliable, they're *mechanically flexible*, they don't wear. They have no parts subject to repeated bending, tension or compression. There is no metal-to-metal contact, because

of *positive lubrication*. Regardless of your field—no matter whether your connected machine is driven by steam turbine or electric motor, low-speed diesel or high-speed gas turbine . . . Koppers has the perfect, low-cost solution to your shaft coupling problem.

For free catalog write to: KOPPERS COMPANY, INC., *Fast's Coupling Dept.*, 2704 Scott St., Baltimore 3, Md.

METAL PRODUCTS DIVISION • KOPPERS COMPANY, INC. • BALTIMORE 3, MD. This Koppers Division also supplies industry with American Hammered Industrial Piston and Sealing Rings, Aeromaster Fans, Industrial Gas Cleaning Apparatus, Gas Apparatus.

Engineered Products Sold with Service



THE ORIGINAL

FAST'S Couplings

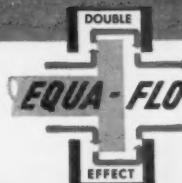
*Two stages
of refining...*
in one pass through one machine



USING THE

Jones

DOUBLE-D with

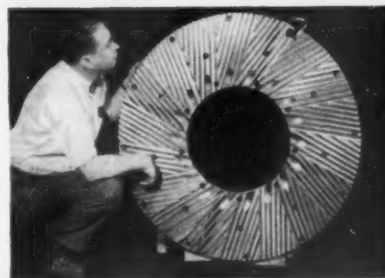


Does the work of two conventional refiners

That's the record in one big southern mill where the Jones Double-D Refiner has been in regular operation for more than 18 months.

For the Double-D, although new, is not untried. Far from it! Proven by exhaustive tests in a number of mills, this first truly pressurized disc refiner has demonstrated its ability consistently to do the work of two or more conventional refiners.

To learn more about its remarkable performance, clean design, and ease of maintenance and operation, ask your Jones representative or write us direct for Bulletin EDJ-1083.



One of four huge refining discs in the Double-D. Stock, passing under constant pressure between two stationary discs and two rotating discs, gets perfectly controlled 2-pass refining . . . double refining effect.

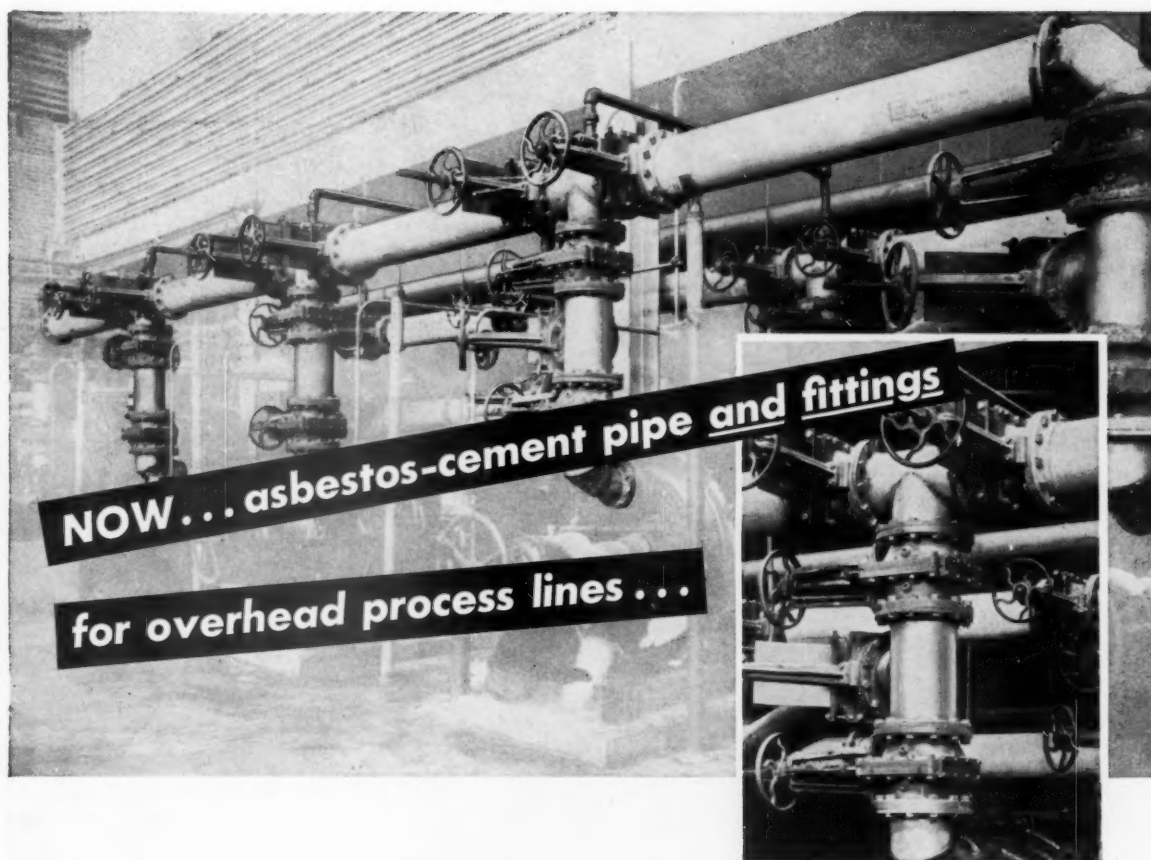
E. D. Jones & Sons Company
Pittsfield, Massachusetts

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

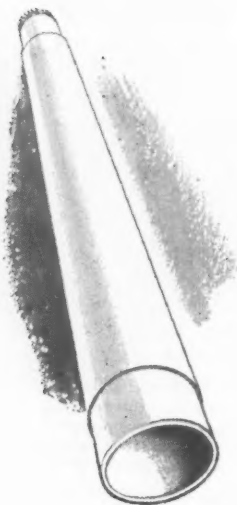
Jones

In Canada:

The Alexander Flock, Ltd., Ottawa



Transite Pressure Pipe provides high carrying capacity and economical, efficient service...



You can now obtain Transite* asbestos-cement Pressure Pipe with Transite-lined Streed Fittings for your overhead process systems. This permits the installation of high strength non-metallic pipe for handling raw and treated water, washed and unwashed pulps, stocks of all kinds, multi-stage bleaching systems (except direct chlorination) and certain mill wastes. There is no better way to provide clean pulp and stock than by handling it through Transite Pressure Pipe.

Low installation costs—Transite is light in weight, easy to handle, and can be drilled, cut, threaded and machined with standard tools. And, because its carrying capacity stays high, you can specify the smallest diameter pipe necessary... thus making the minimum capital investment.

Low pumping costs—Transite Pressure Pipe offers exceptionally low frictional resistance to the flow of liquids (flow coefficient $C=140$ for water). Since it is resistant to sliming and bacterial growths, this high carrying capacity is continuously maintained so that pumps can be operated at maximum efficiency and lowest cost.

Low maintenance costs—Transite cannot rust and is highly resistant to the corrosive action of mild acids and alkalis. Consequently, it requires a minimum of maintenance throughout its long life.

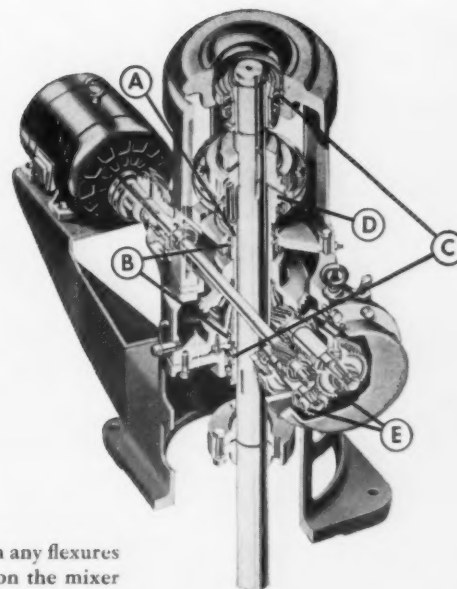
For underground service too, such as water supply or fire lines, Transite Pressure Pipe offers the same outstanding advantages. To obtain further information on Transite Pipe Systems for paper mills, write Johns-Manville, Box 60, New York 16, N. Y.

*Reg. U. S. Pat. Off.



Johns-Manville TRANSITE PRESSURE PIPE

Why you'll probably get
20 years' service
out of this fluid mixer



No, we can't guarantee that LIGHTNIN Mixers will mix fluids, day in, day out, for 20 years or more. But a great many of them do.

Here are just a few of the reasons why *you* may find that LIGHTNINs in your tanks enable you to hold depreciation costs down where they belong —and keep productivity *up* by minimizing shutdowns for maintenance and repair.

An important part of this LIGHTNIN Mixer is the gearing. And that's the part that needs most protection.

The gears you see here are me-

chanically insulated from any flexures or sudden shock loads on the mixer shaft. The gears drive a hollow quill (A), suspended in heavy-duty bearings (B) which carry power transmission loads only.

The mixer shaft is suspended in its own separate pair of adapter-type prelubricated bearings (C). The shaft passes through the quill with full clearance. Shaft and quill are connected at only one point (D) by a flexible coupling.

This hollow-quill construction isolates the shaft from the gearing. It

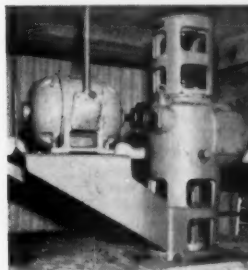
saves wear on the gears, and protects them against damage. And it lets you remove the mixer shaft upward or downward, and you can even use shafts of different diameters.

Interchangeable speeds

The change gears (E) permit quick change of speed for a range of 16 standard AGMA speeds. You can change mixing speed, should it ever become necessary, by replacing two change gears with a pair of a different ratio. No special tools are required, and the mixer need not be removed from the tank.

You can select from hundreds of power-speed combinations, in standard units, without need for special construction. Speeds other than standard can be had without limit.

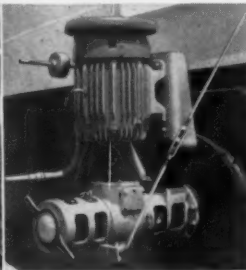
Get set *now* to take advantage of the long-term savings you make with LIGHTNIN Mixers. For the full story, just call your LIGHTNIN representative, listed in Thomas' Register. Or write us today.



TOP ENTERING LIGHTNINs provide exact power-speed combination to fit the job. Models for open or closed tanks. Sizes 1 to 500 HP.



LIGHTNIN PORTABLE Mixers make any open tank an efficient mixing vessel. Thousands are in use. Electric and air driven types. Thirty models, 1/4 to 3 HP.



SIDE ENTERING units mix or blend fluids in tanks as large as 5 million gallons. Choice of stuffing boxes or rotary mechanical seals. 1 to 25 HP.

Lightnin[®]
Mixers

MIXCO fluid mixing specialists

Get these helpful facts on mixing: cost-cutting ideas on mixer selection; best type of vessel; installation and operating hints; full description of LIGHTNIN Mixers. Free—no obligation. Just check data you want, tear out and mail to us today with your name and company address.

☐ B-102 Top Entering Mixers (turbine, paddle and propeller types)

☐ B-103 Top Entering Mixers (propeller types)

☐ B-104 Side Entering Mixers

☐ B-107 Mixing Data Sheet

☐ B-108 Portable Mixers (electric and air driven)

☐ B-109 Condensed Catalog (complete line)

☐ B-111 LIGHTNIN Rotary Mechanical Seals

☐ B-112 Laboratory Mixers

MIXING EQUIPMENT Co., Inc., 141-d Mt. Read Blvd., Rochester 11, N. Y.
 In Canada: **Greey Mixing Equipment, Ltd.**, 100 Miranda Ave., Toronto 10, Ont.



"Blue Chip" companies use

AIRVEYOR

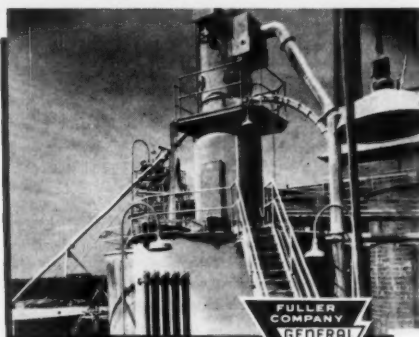
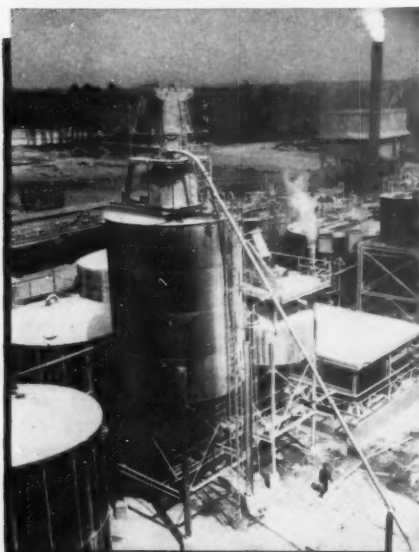
in the pulp and paper industry

Down through the years, in fact, over a quarter of a century, the Airveyor Conveying System has served the pulp and paper industry—a job well done.

A glance at the list of users will prove our claim, that Fuller engineering and equipment satisfies and dominates the industry for clean, efficient handling of mill supply chemicals—soda ash, salt cake, lime, clays, and wood chips.

More than 140 Airveyor systems are in operation in the industry in the United States and Canada; individual company purchases ranging from one to twelve systems.

When you need conveying, you need Fuller. Our engineers are at your service, always ready to make a study of your requirements and recommend equipment for the improvement of your operation.



International Paper
Fibreboard Products
St. Regis Paper
Buckeye Cellulose
Hudson Pulp & Paper
Rayonier, Inc.
Georgia Kraft
Gaylord Container
Brown Paper Mill
Eastern Corp.
Fraser Paper
Oxford Paper
West Virginia Pulp & Paper
Tileston & Hollingsworth
Fitchburg Paper
Escanaba Paper
Blandin Paper
Minnesota & Ontario Paper
Brown Co.
Finch-Pruyn
Newton Falls Paper
Riegel-Carolina
Chillicothe Paper
Mead Corporation
Oxford-Miami
Crown-Zellerbach
St. Helens Pulp & Paper
Scott Paper
New York & Pennsylvania
Bare Paper
Glatfelter Co.
Bowaters-Southern
East Texas Pulp & Paper
Champion Paper & Fibre
Camp Mfg. Co.
Chesapeake Corp. of Va.
Puget Sound Pulp & Timber
Weyerhaeuser Timber
Consolidated W. P. & Paper
Kimberly-Clark
Ketchikan Pulp
MacMillan & Bloedel
Smith Paper Mills
Dryden Paper
KVP Company, Ltd.
Marathon Paper
Ontario Paper
Canadian International Paper
Canada Paper
North Western Pulp and Power
Canadian Forest Products
Elk Falls
Nekoosa-Edwards
Western Kraft
Franconia Paper

FULLER COMPANY

128 Bridge St., Catsauqua, Pa.

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*Follow the Arrows to
Lower-Cost Cutting with a*

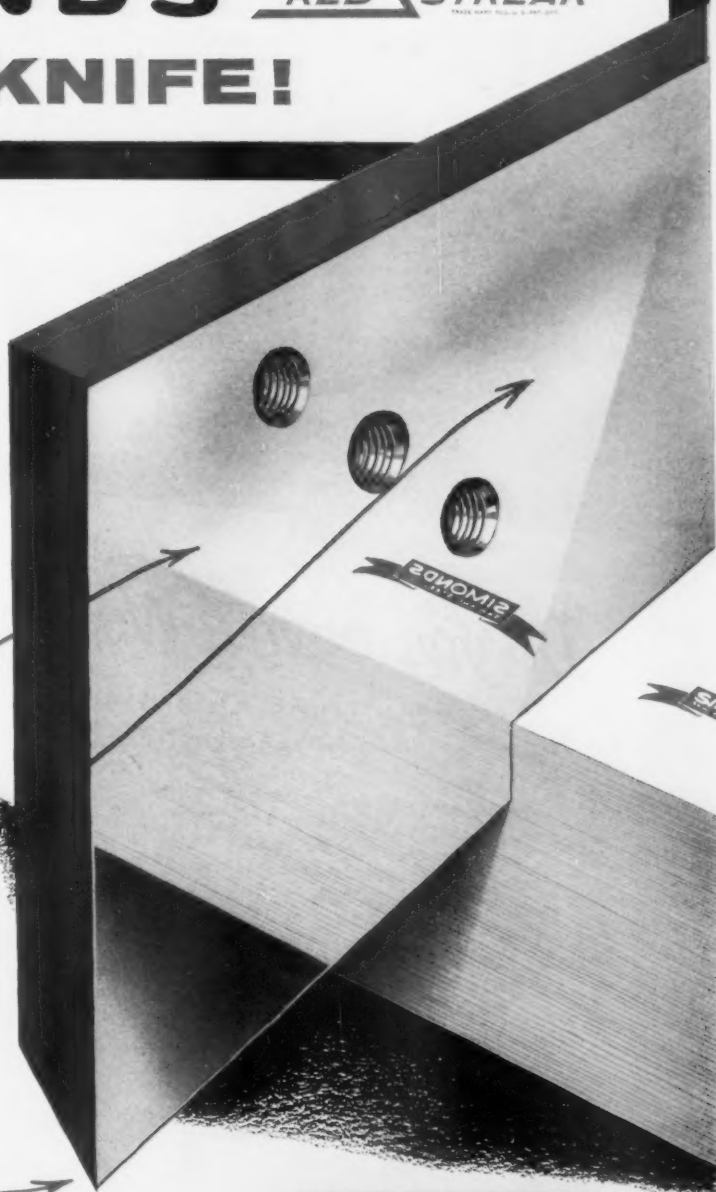
SIMONDS RED STREAK **PAPER KNIFE!**

There are many, many kinds of steel today BUT THIS IS THE ONE THAT'S BEST FOR CUTTING PAPER! We call it "S-301", you'll call it "excellent". It's from Simonds' own Steel Mill and is the result of constant research and testing. Combines maximum hardness with toughness to give you more cuts per grind.

Note the supersmooth mirror-like finish on the face side. It's an important factor in maintaining a razor-sharp cutting edge for the longer life of a Simonds Knife.

Concave Ground on the face side for maximum clearance, the knife cuts freely and easily without rubbing the stock — gives you cleaner, straighter cuts with less strain on knife and cutter.

For a longer-lasting cutting edge (and a minimum of resharpening) plus dependable performance always, follow the arrows to Simonds Paper Knives. Many standard sizes are available from stock.



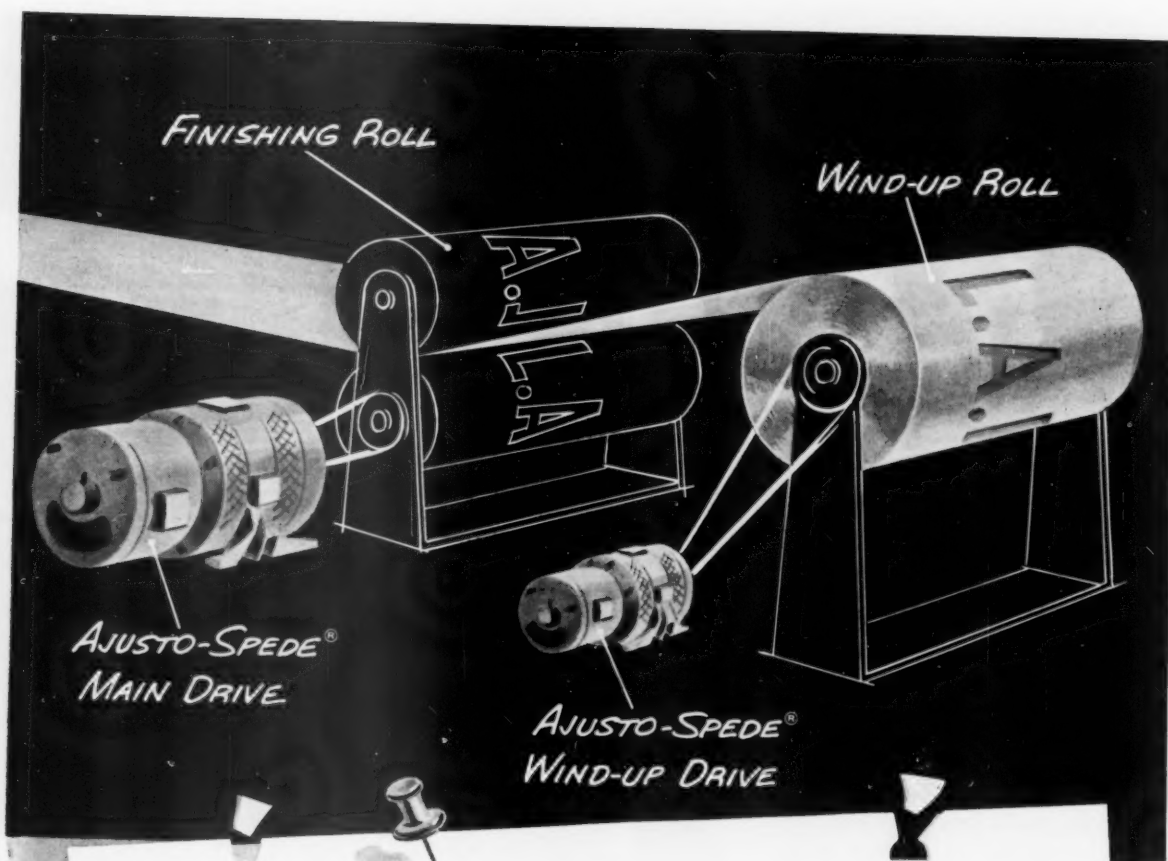
**For Fast Service
from
Complete Stocks**



Call your
**SIMONDS
Industrial Supply
DISTRIBUTOR**



Factory Branches in Boston, Chicago, San Francisco and Portland, Oregon, Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y., Heller Tool Co., Newcomerstown, Ohio, Simonds Abrasive Co., Phila., Pa., and Arrida, Que., Canada



Do you have a Wind-up Problem?

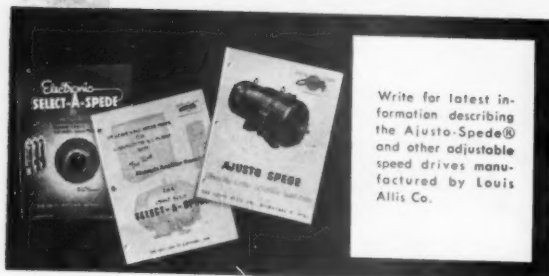
The Louis Allis Ajusto-Spede® Drive gives you the best answer

The Ajusto-Spede® drive has solved many difficult wind-up problems--has successfully handled a wide range of materials from cigarette paper to steel. Just look at the versatility of this drive--what it can do for you:

- Linear speed range from 100 to 2000 fpm.
- Roll build-up ratios up to 15:1.
- Tensions from 1/2 lb to 10 lbs per inch of width.

But that's not all. No dancer roll is required. An AC signal generator, mounted on the main drive, corrects for changes in linear speed. A special circuit provides inertia compensation during periods of acceleration or deceleration. Adjustable stalled tension is also provided.

Don't let your wind-up problems throw you. Consult your Louis Allis field engineer--he has the drive and he also has engineering experience in applying these drives that can help you.

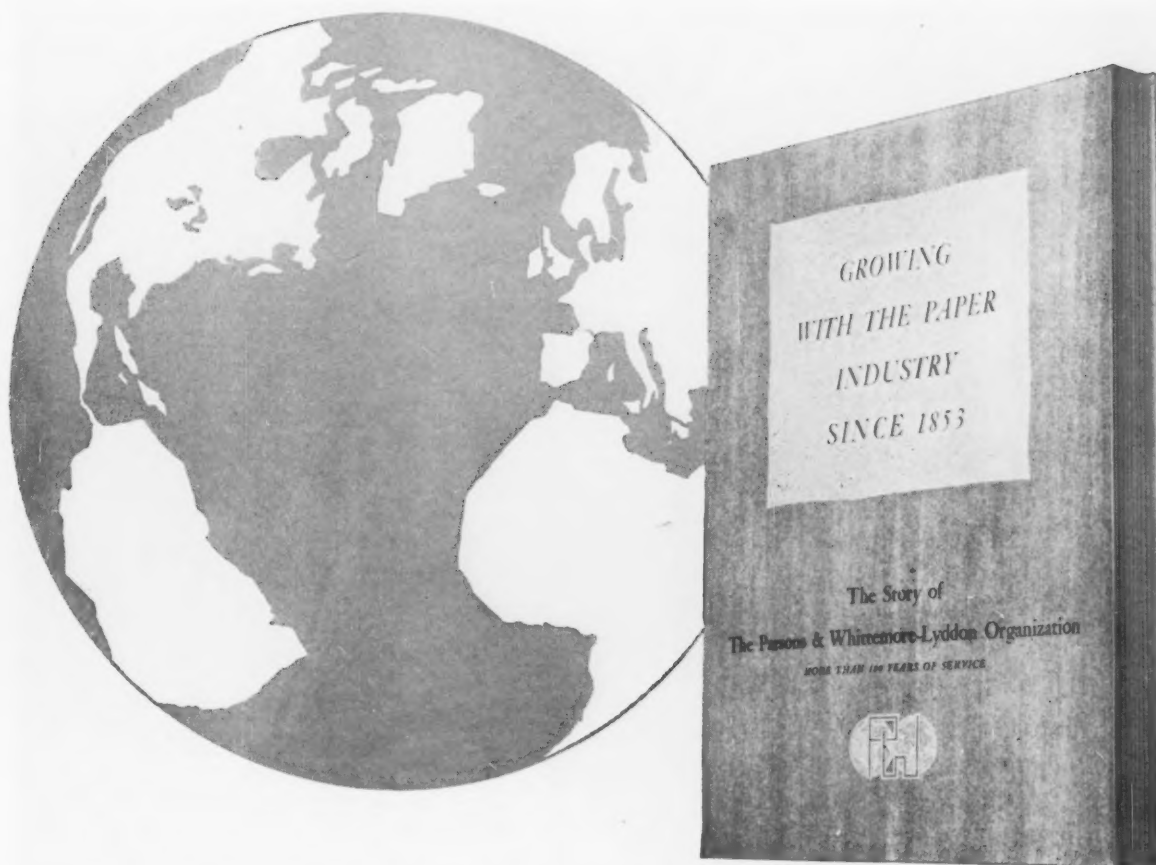


AS-102



THE LOUIS ALLIS CO.
MILWAUKEE 7, WISCONSIN

April 1956 — PULP & PAPER



New book describes world-wide pulp & paper development services

Here is a book that tells how you can profit by using the comprehensive world-wide services of The Parsons & Whittemore-Lyddon Organization. With more than 100 years of experience, this international organization can facilitate your pulp and paper business development anywhere in the world. "Growing with the Paper Industry" explains these services:

Marketing wood pulp, and *developing new pulp and paper business abroad.*

Testing and research, to determine the suitability of such raw materials as cereal-straw, rice-straw, bagasse, abaca, esparto grass, eucalyptus, bamboo and fast-growing tropical hardwoods, in the making of paper.

Advice about and aid in producing pulp and paper

of suitable material anywhere on earth; or redesigning of existing plants; assistance in developing a financial program.

Distributing machinery world-wide for pulp and paper making, as well as for use in the graphic arts.

Providing top management wherever needed for foreign pulp and paper projects.

From building production facilities to marketing pulp and paper anywhere in the free world, this Organization can help you. This new book—and its companion volume "The Mechano-Chemical Process for Production of Pulp from Straw, Bagasse and other Vegetable Fibres"—will tell you how.

Write for your free copies of these books.

THE PARSONS & WHITTEMORE / LYDDON ORGANIZATION

World Leaders in the Development of Pulp Mills for the Use of Bagasse, Straw or Other Vegetable Fibres

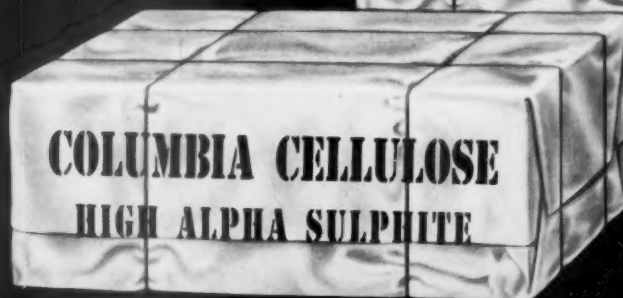
250 Park Ave., New York 17, N. Y.



35 New Bridge St., London EC4, England

Bleached Sulphite Wood Pulp

dissolving
and
paper
grades
shipped
in
bales
or
rolls



COLUMBIA CELLULOSE
PRIME BLEACHED SULPHITE

COLUMBIA CELLULOSE
HIGH ALPHA SULPHITE

COLUMBIA  CELLULOSE

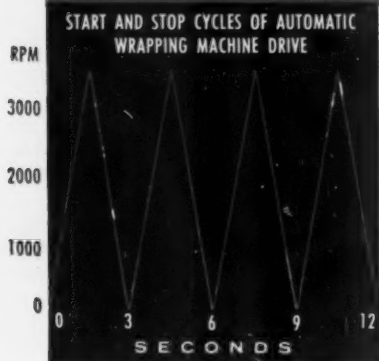
COMPANY LIMITED
PRINCE RUPERT, B.C.

Pulp Mill — Prince Rupert, B.C.

Sales Office — 2035 Guy St., Montreal, Que.



**20 ROLLS OF
"SARAN WRAP"
EVERY MINUTE**



The Dow Chemical Company's production of "Saran Wrap" has leaped from 130,000 rolls to 4,000,000 rolls a month since 1951. This up-swing is due to a new plant, a new flow system, and additional equipment including new machinery equipped with Reliance V*S Drives.

One of the most dramatic applications of V*S Drives is on the final wrapping machines shown here. The drives must be able to start, accelerate to 3500 rpm., and stop more than 20 times a minute.

The most important feature, though, is not the frequent starts and stops, but the delicately controlled acceleration of the drives. "Saran Wrap" is only 1/6th as thick as a human hair, and sharp or jerky starts will cause a break in the sheet and halt production. Reliance Drives do the job day in and day out without a single break due to uncontrolled acceleration.

This feature of V*S Drives, called *Dynamic Response*, is only one of the many facets of Reliance Drives. V*S Drives can regulate tension, synchronize operations, control speed rates, and automatically program speed changes.

Whether you handle a thin film of plastic or steel billets, on a complete production line or a single machine, Reliance can give you better quality, more production, and lower costs through Variable Speed Drives.

D-1506

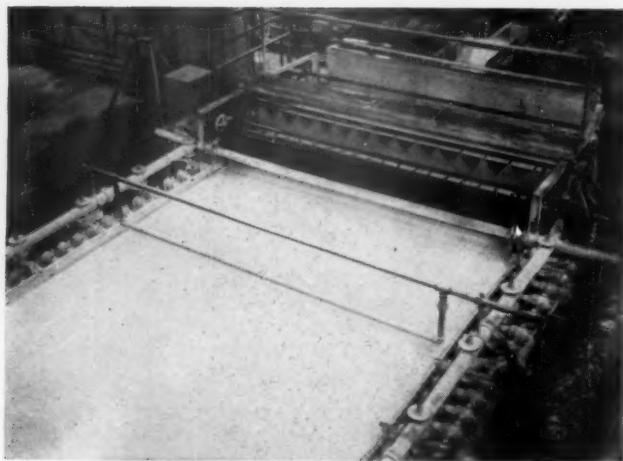
Write for bulletin D-2311.

**RELIANCE ELECTRIC AND
ENGINEERING CO.**

CLEVELAND 10, OHIO • OFFICES IN PRINCIPAL CITIES
Canadian Division: Welland, Ontario



High-speed flocculating agent improves filler retention, clarification of process mill water and white liquor



Separan 2610, the new flocculating agent, proves to be a better answer to many problems in the pulp and paper industry.

Nearly overnight Separan* 2610 has become important to many operations in the manufacture of pulp and paper.

Let's Be Specific!

Separan 2610 has all the keys to a product's success. It's effective in both acid and alkaline media. It requires no preservative. Interested? There's more. This synthetic organic polymer is noncorrosive and presents no hazard in normal handling and industrial usage. It's easy to prepare and easy to apply.

Better, Faster, Less Cost

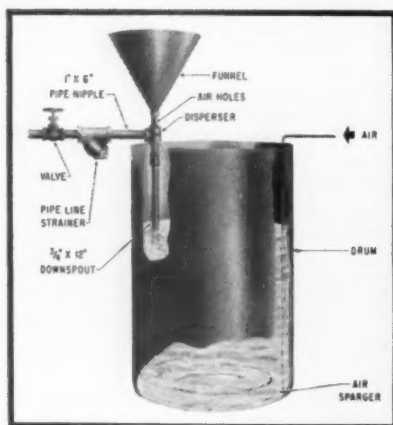
For example, one mill applied Separan 2610 to the paper machine headbox and realized a considerable reduction in the amount of titanium dioxide required in the furnish.

In another application, a Kraft pulp mill was able to improve overflow clarity and greatly reduce retention time in white liquor clarifiers.

Another process of major importance to the paper industry is the clarification of process mill water. Again, Separan 2610 has proved an excellent floc aid.

You'll want a sample and more information on Separan 2610. Write on your company letterhead to THE DOW CHEMICAL COMPANY, Dept. TS-935G-1, Midland, Michigan.

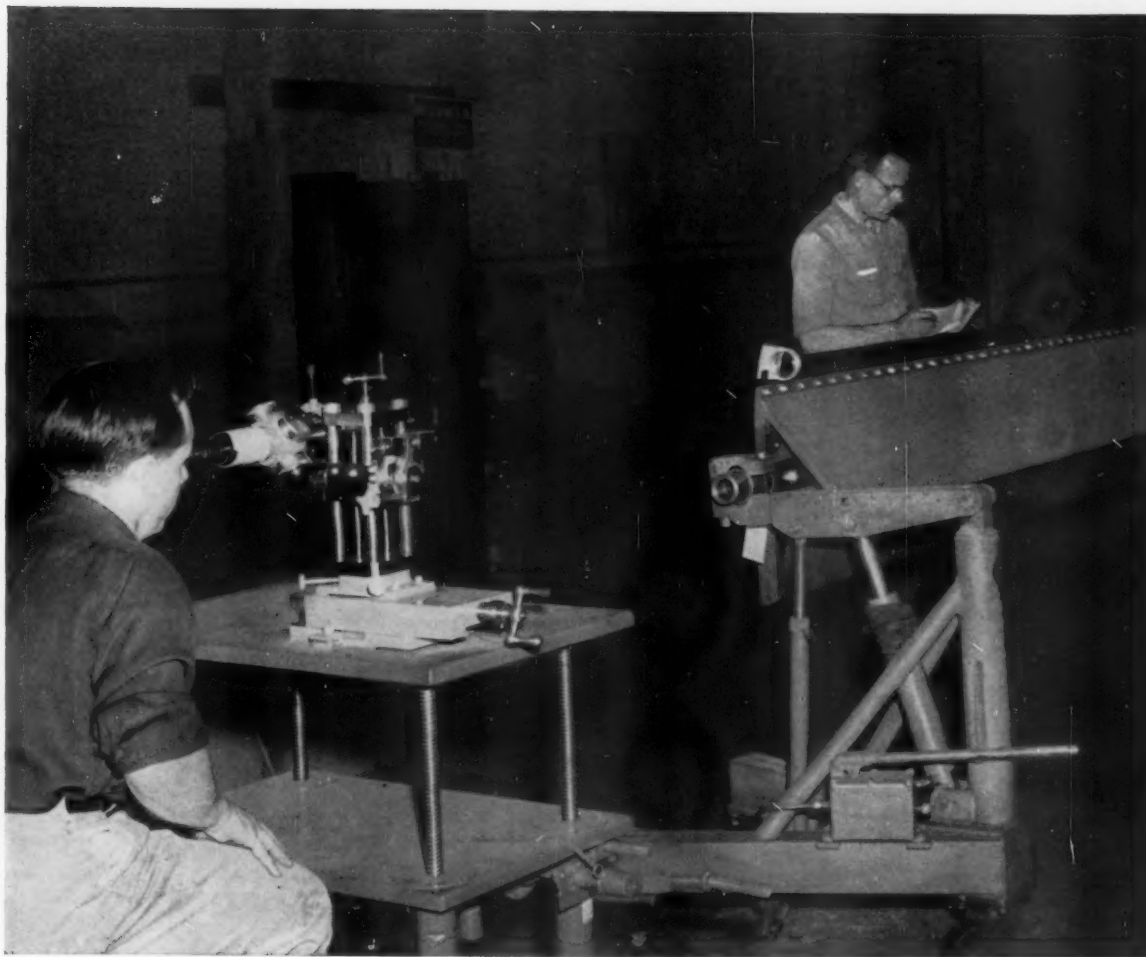
*Trademark of The Dow Chemical Company



***New Disperser** has been developed by The Dow Chemical Company to permit rapid dissolving of larger amounts of Separan 2610 without use of a mechanical mixer.*

you can depend on **DOW CHEMICALS**





Optical test. With doctor in working position, inspector at Lodding Engineering Corporation checks "K" Monel blade for

straightness. "K" Monel is extra strong, extra hard. It offers high resistance to wear and corrosion . . . and does not feather-edge.

Blades made of "K" Monel*...

pass all on-the-job tests, too!

Frequent changes of doctor blades — you know what they do to production schedules and costs!

Why let them — when LODDING ENGINEERING CORPORATION makes blades of corrosion-resisting "K" Monel age-hardenable nickel-copper alloy?

"K" Monel blades run two to five hours between grinds, depending on the paper you're making. Their surfaces stay smooth . . . wear uniformly. Your rolls are left clean and unscored. There's no fibre buildup. No scratching. And they last lots longer than most blades.

LODDING recommends "K" Monel. For all types of creping service. For nearly all metal rolls on your paper machines. See how "K" Monel helps to keep your production up . . . and to hold your costs down.

LODDING ENGINEERING CORPORATION, makers of qual-

ity blades, can supply your needs for all types of "K" Monel doctors. Write Lodding — Dept. K; Worcester, Mass. — for more information. And write us for help in picking the right metal for any corrosive job in your mill!

*Trademark

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.



50 YEARS OF
Nickel Alloy Progress
PIONEERED BY MONEL
1905 - 1955

"K" Monel...for longer life



Shovel-loading
train of gondolas.

Crude Sulphur

for Industrial Use

*from
the
properties
of*

Texas Gulf Sulphur Co.

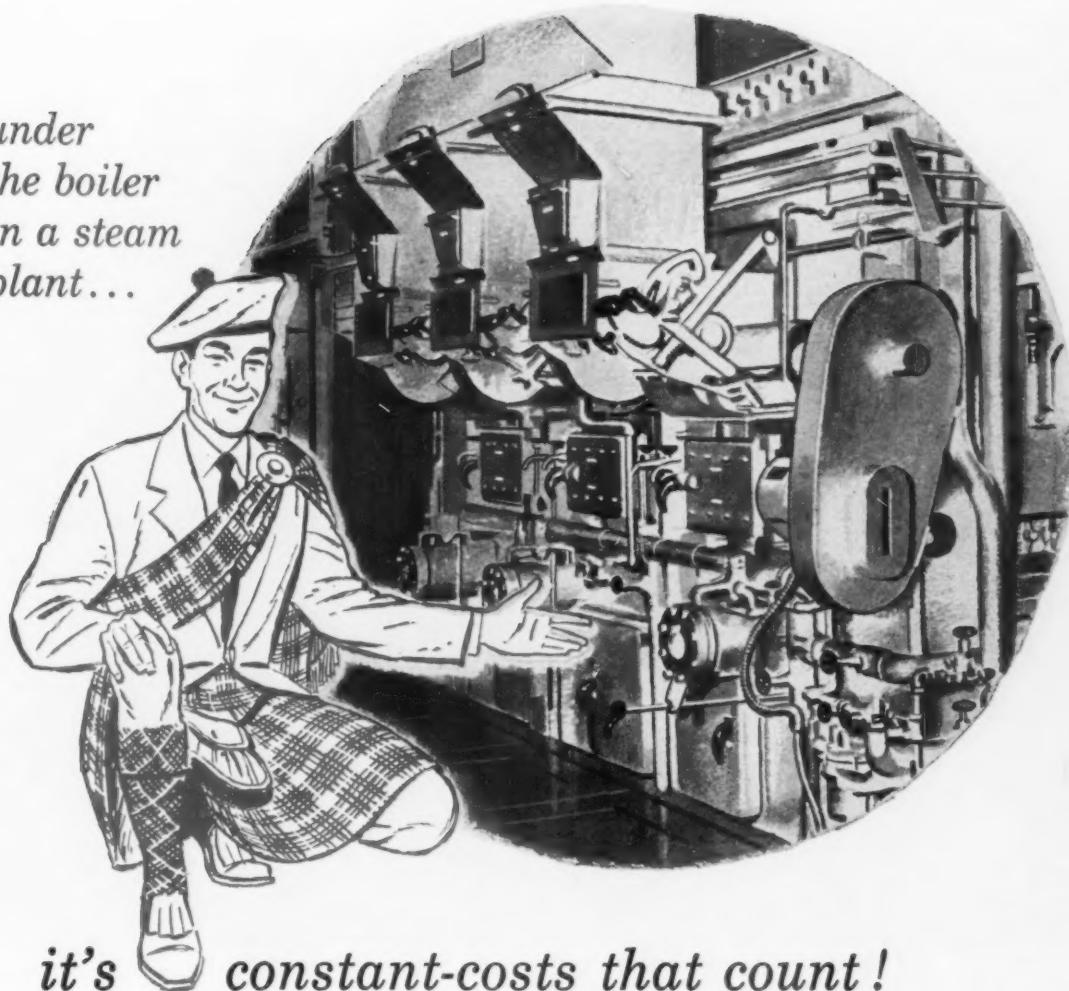
75 East 45th Street • New York 17, N. Y.



Producing Units

- NEWGULF, TEXAS
- MOSS BLUFF, TEXAS
- SPINDLETOP, TEXAS
- WORLAND, WYOMING

*under
the boiler
in a steam
plant...*



it's constant-costs that count!

Be Thrifty! Expensive boiler installations designed to burn fuels with limited futures is doubtful wisdom. The sensible alternative is to *bank on Bituminous!* Plotting your costs over the long run will prove efficiency and lowest cost in most cases. For, Bituminous reserves are unlimited—they're nearest to most manufacturers—coal technology improves burning equipment, efficiency and cost year by year.

**Let our Coal Technical Service plot a constant-low-cost
Bituminous coal for your needs. Ask our man!**

**COAL TRAFFIC DEPARTMENT, BALTIMORE & OHIO RAILROAD
Baltimore 1, Maryland—Phone: LExington 9-0400**

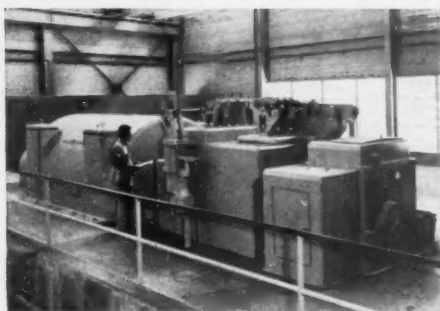
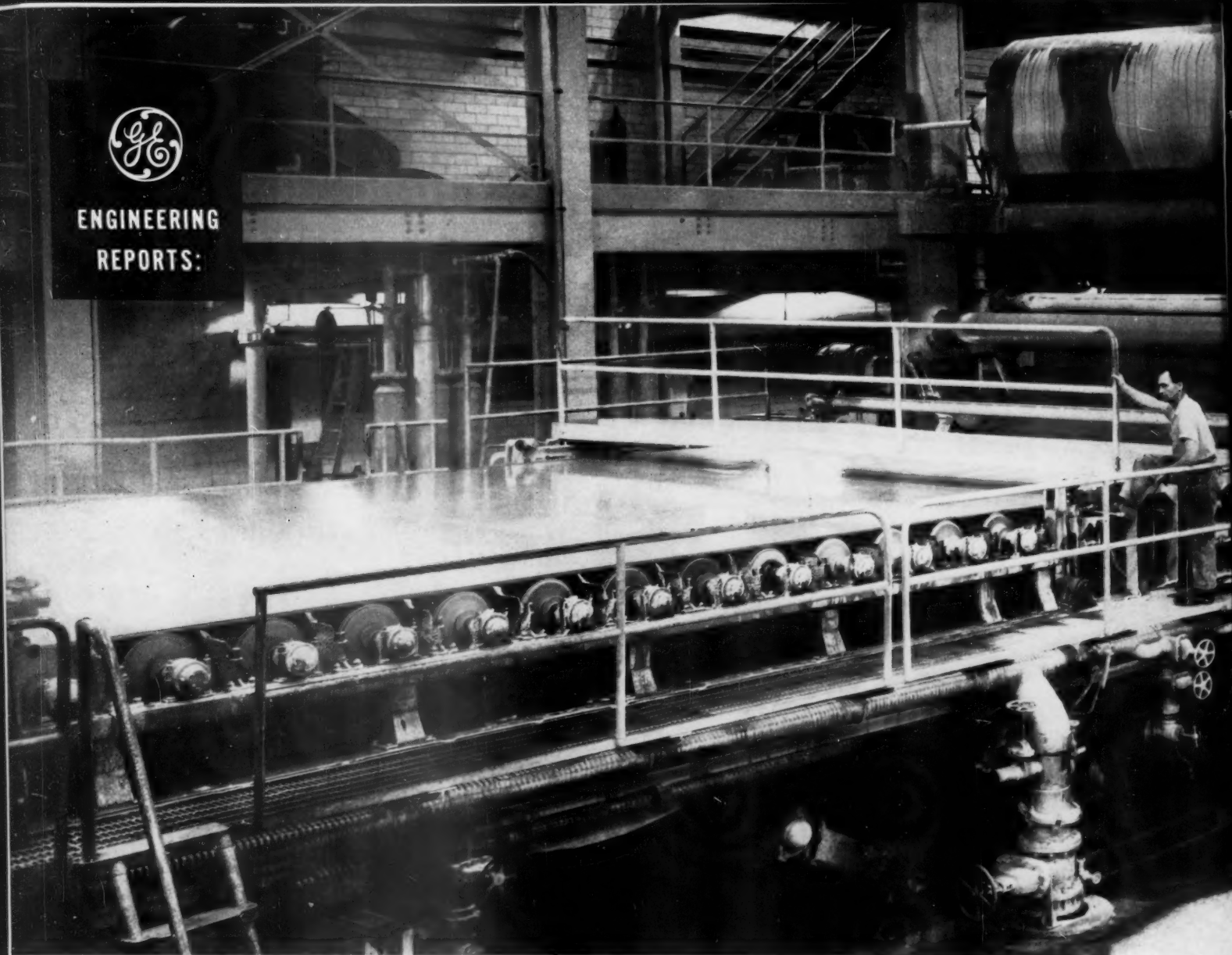


BALTIMORE & OHIO RAILROAD

BITUMINOUS COALS FOR EVERY PURPOSE

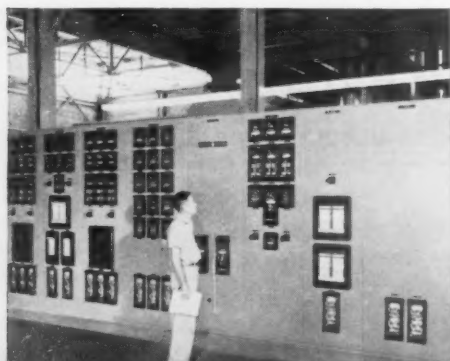


ENGINEERING REPORTS:



ABOUT HALF of the mill's electrical requirements are produced by two 10,000-kw, single automatic extraction, non-condensing steam turbine-generator units, one of which is shown above. Steam is re-used for paper processing to increase mill's efficiency.

"BRAIN" of the distribution system, center for the mill's controls and metering, is located in this centrally placed and readily accessible duplex control board.



At Bowaters' new \$60,000,000 mill,

**General Electric engineered
electrical system helps
Bowaters Southern exceed
mill design capacity**

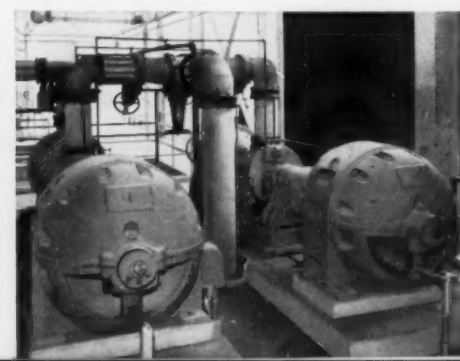
The Bowaters Southern Paper Corporation, Calhoun, Tenn., is one of the newest paper mills and the largest newsprint mill in the South. Recognized for outstanding—and in some areas revolutionary—paper manufacturing methods, Bowaters installed a G-E engineered electrical system designed to handle present huge power requirements and allow for future expansion.

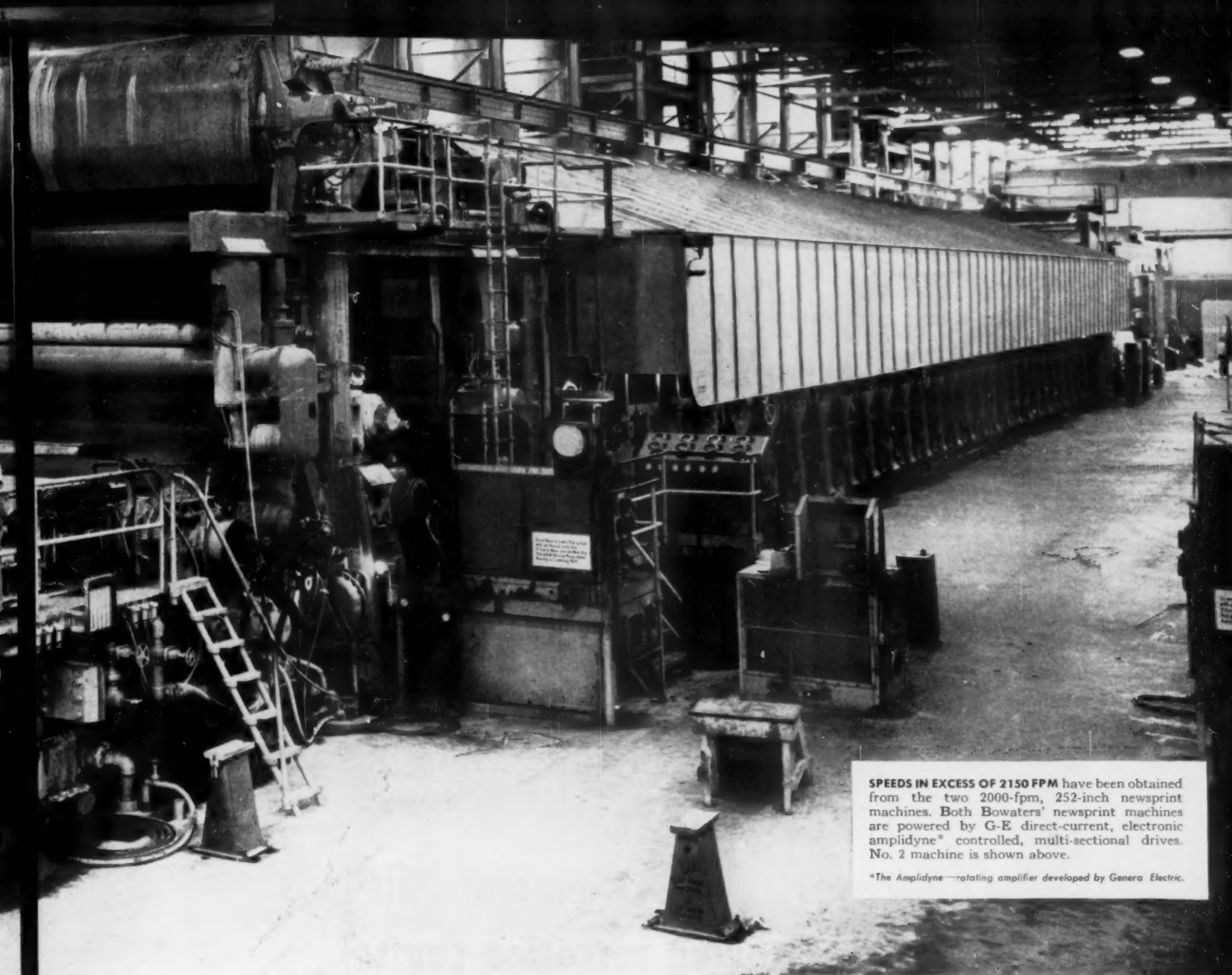
THE ELECTRICAL EQUIPMENT for generation, distribution and utilization was completely co-

EIGHT G-E 4500-horsepower synchronous motors drive grinders, each devouring two cords of five-foot wood an hour. G-E switchgear is shown at far right.



TOTAL HORSEPOWER of all the mill motors is about 74,000. Below, two G-E 300-hp induction motors drive jordsans during raw pulp make-up stages.





SPEEDS IN EXCESS OF 2150 FPM have been obtained from the two 2000-fpm, 252-inch newsprint machines. Both Bowaters' newsprint machines are powered by G-E direct-current, electronic amplidyne* controlled, multi-sectional drives. No. 2 machine is shown above.

*The Amplidyne—rotating amplifier developed by General Electric.

production hits 550 tons of newsprint, 150 tons pulp per day

ordinated and system engineered. It was designed for, and is operated with, the system neutral grounded at all voltage levels. The 13.8-kv main voltage level is very satisfactory for the present large load and adequately provides for future growth requirements. System flexibility was demonstrated by the fact that it was possible to exceed original design capacity and obtain greater production without endangering plant personnel or equipment.

WHEN YOU EXPAND OR MODERNIZE, investigate the advantages of G-E electrical equipment and engineering services. G-E engineers will work with you to design and install an engineered system that meets your production requirements. These services will help by saving you valuable time and by helping to co-ordinate your project through start-up.

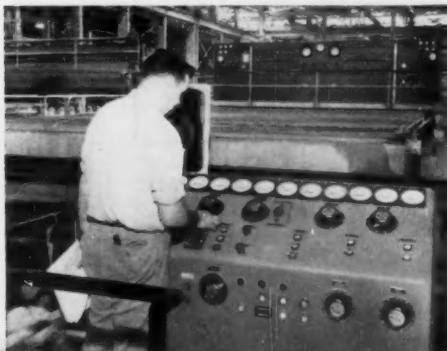
YOUR G-E APPARATUS SALES REPRESENTATIVE will tell you more about G-E equipment and

G-E engineering services. Contact him early in your planning and write for bulletin GED-2244, "Engineering Services," to General Electric Co., Section 681-9, Schenectady 5, N. Y.

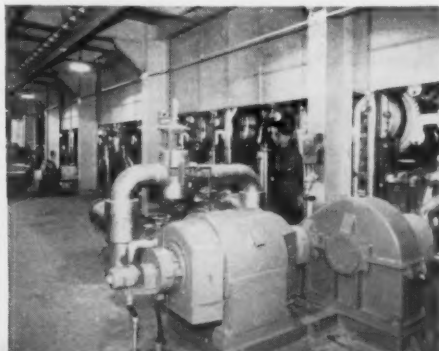
**Engineered Electrical Systems for
the Paper Industry**

GENERAL  ELECTRIC

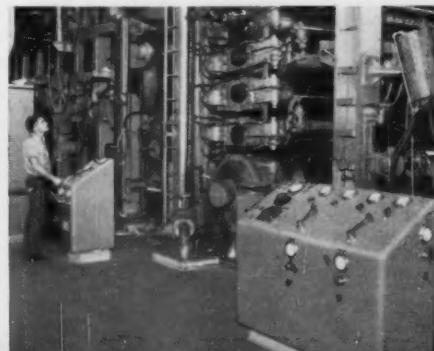
WIDE DRAW ADJUSTABILITY for maximum flexibility and paper quality is accomplished through wet-end control. Draw is set with simple rheostat adjustment.



UNOBSTRUCTED ACCESS to the backside of the machine with G-E direct current sectional drives is demonstrated by this view of No. 1 machine.



INSTANT SLACK TAKE-UP and adjustable acceleration and deceleration are possible with G-E sectional drives. Below is operator's calendar and reel console.



**NOW
AVAILABLE!**



Carpenter **PVC** pipe and fittings for cost-saving corrosion control

● Here is a new Carpenter service to help processing plants cut piping costs for handling a wide variety of corrosives under moderate operating temperature and pressure conditions. Carpenter PVC Plastic Pipe and Fittings are admirably suited for such piping requirements because of the excellent corrosion resistance, strength and other desirable properties of the unplasticized polyvinyl chloride from which they are made. They withstand both oxidizing and reducing conditions. For this reason, Carpenter PVC Pipe and Fittings supplement other corrosion-resistant piping materials previously made available by Carpenter research and production advances in stainless and specialty steels.

Two types of Carpenter PVC Pipe and Fittings are available—No. 1 provides outstanding chemical resistance along with high strength, toughness and rigidity. No. 2 provides high impact strength and excellent corrosion resistance. Both types are available in eight pipe sizes of 1/2" to 4". Pipe is made in Schedules 40 and 80. A full line of Schedule 80 threaded and socket fittings is available.

Easily and economically installed with usual piping tools, Carpenter PVC Pipe and Fittings assure trouble-free service with cost economy. Why not look into the advantages of using Carpenter PVC piping systems in your plant? Consult your nearby Carpenter Distributor or Representative and ask for new Technical Bulletin T.D. 119.

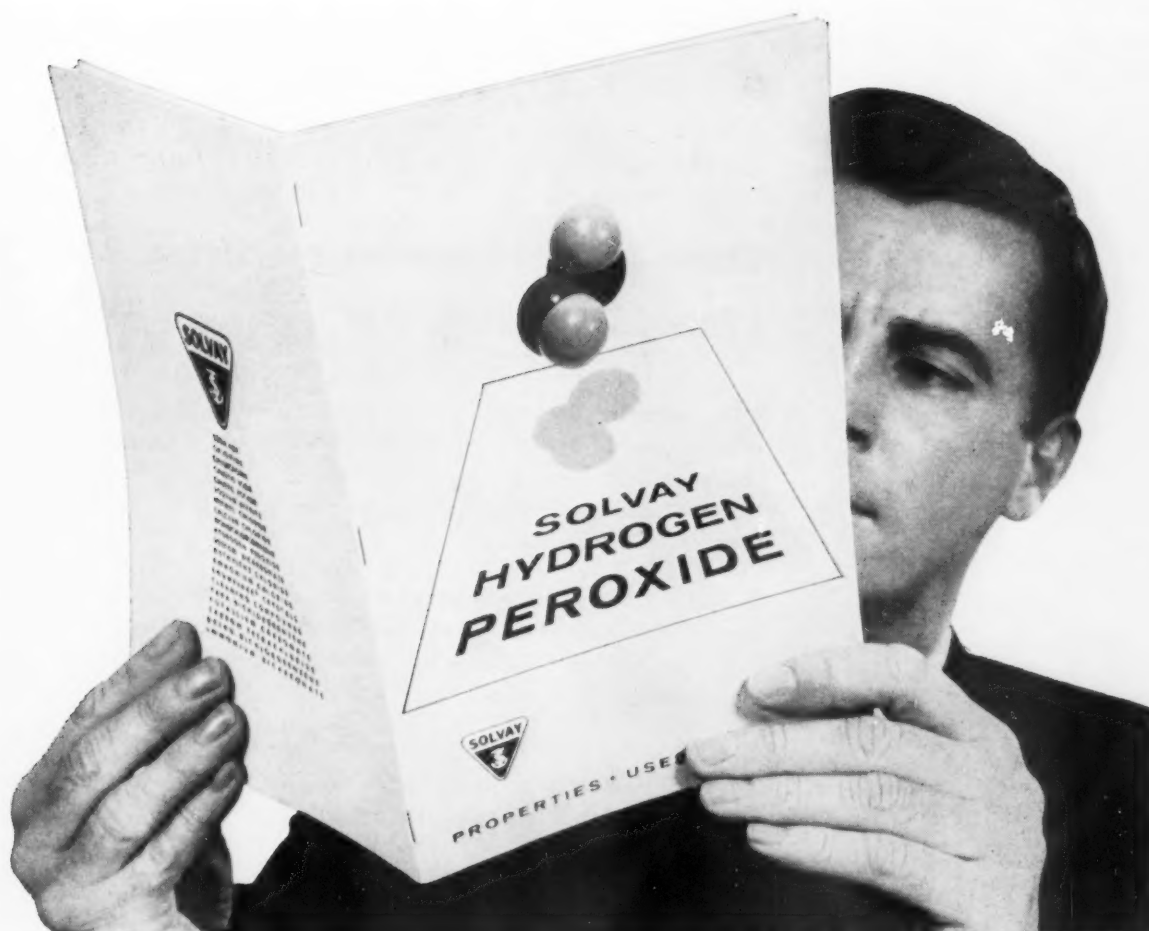
MEMBER



**The Carpenter Steel Company,
Alloy Tube Division, Union, N. J.**

Export Dept.: The Carpenter Steel Co., Port Washington, N. Y.—"CARSTEELCO"





HERE'S THE NEWEST BOOK ON HYDROGEN PEROXIDE!

New 24-Page Book Gives You the Facts

Just off the press, this latest SOLVAY® factbook on hydrogen peroxide contains sections on physical properties, chemical reactions, uses, containers, handling and storage. The biggest section covers these important uses of SOLVAY Hydrogen Peroxide:

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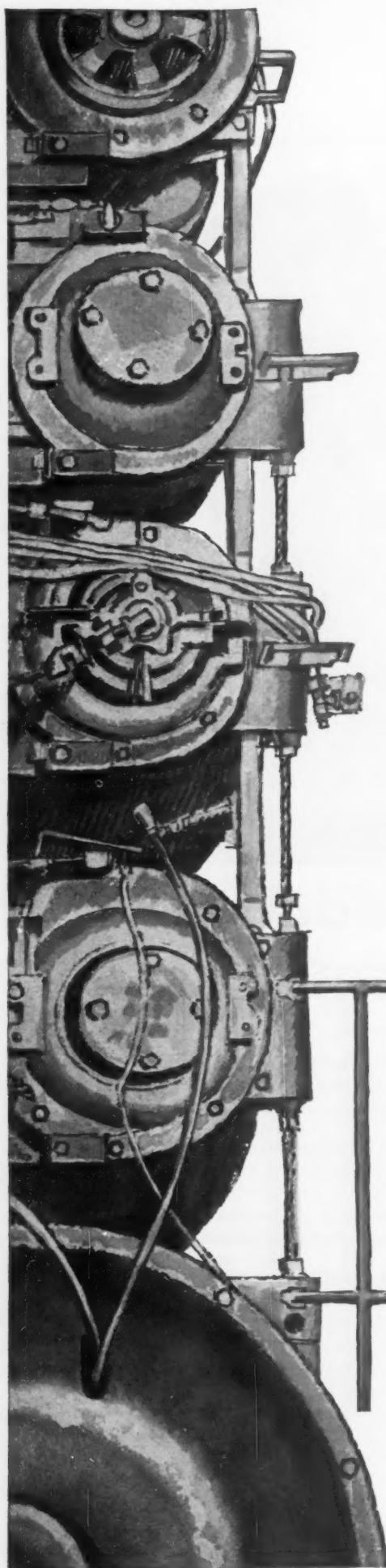
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*In Western Hemisphere Countries.

BG-4



To the mill executive who decides on lubricants—

Three good reasons for specifying STANOIL Industrial Oil

1 The increased demand for paper products results in machinery being operated at speeds higher than rated capacity. Continuous production has placed greater burdens on lubricating oils. Without the best lubrication, equipment failures may occur. Best idea is to specify STANOIL Industrial Oil.

2 Cost of repairs and replacement of parts added to the loss of production, run many times the cost of lubrication. A small investment in STANOIL Industrial Oil is the best possible protection against bearing failures, repair costs and production loss.

3 STANOIL Industrial Oil can be used in a multitude of applications. Inventories of lubricants can thus be reduced and the danger of lubrication failure due to misapplication can be cut or even eliminated.

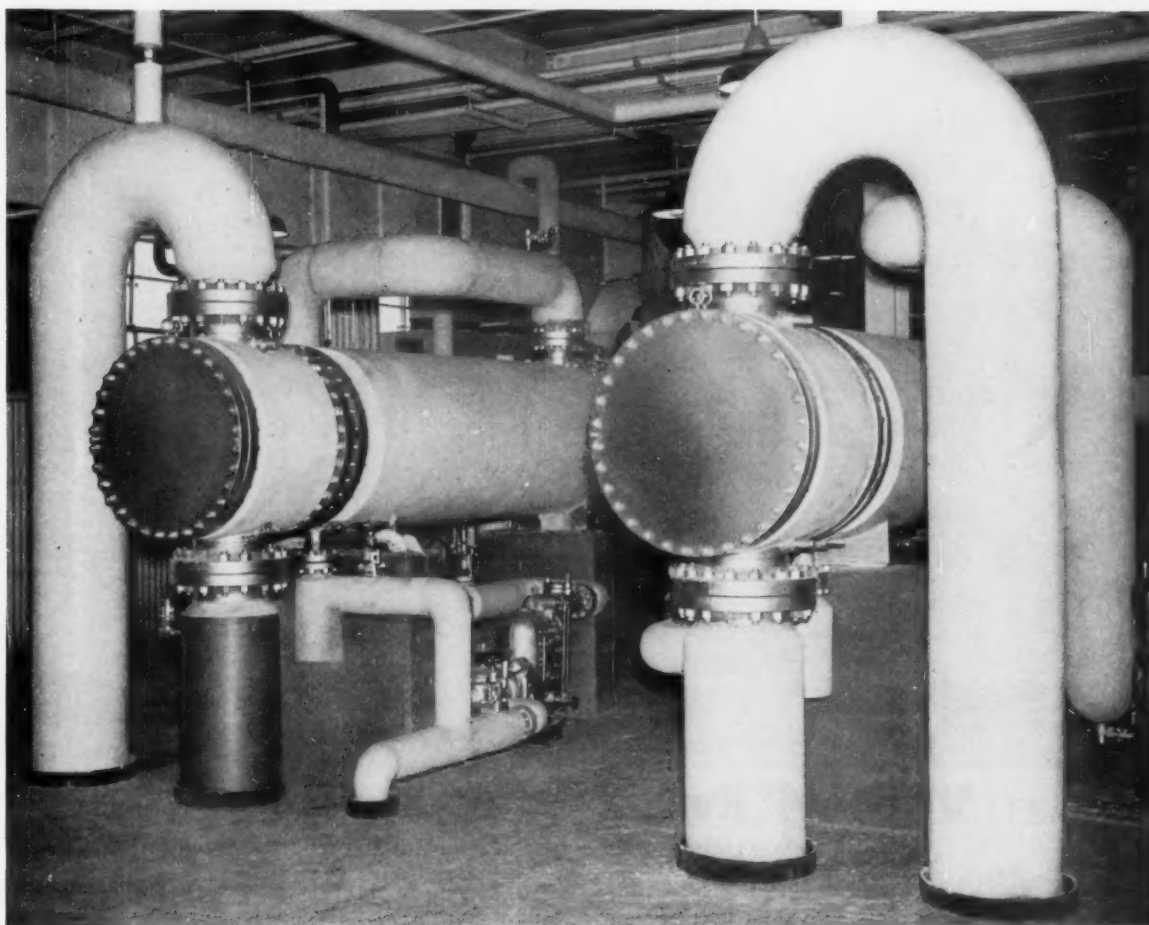
Get more facts about STANOIL from your nearby Standard Oil lubrication specialist. There is one near you in any of the 15 Midwest and Rocky Mountain states. Or write Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.

Quick Facts About STANOIL Industrial Oil

- **Stability**—STANOIL's antioxidant gives oil resistance to chemical change, minimizes deposits.
- **Rust Prevention**—Inhibitor in STANOIL "plates out" on metal surfaces, prevents corrosion.
- **Cold Starts**—STANOIL has low pour point. Flows freely from cold start. No need for costly warm ups.
- **Resists Effects of Temperature Change**—STANOIL has high viscosity index, is resistant to temperature change. Lubricates in both high and low temperature service.
- **Has Excellent Demulsibility**—STANOIL is refined to eliminate emulsion problems, contains additive to minimize foaming.

STANDARD OIL COMPANY
(Indiana)





Unibestos provides low cost, effective insulation for pipes and exchangers used in the Great Northern chemi-groundwood plant.

Unibestos reduces application costs on bends and joints

Here is a stronger, longer lasting insulation that can be cut and mitered for quick, easy insulation of bends, expansion joints, tees, ells and other fittings. A minimum of cementing is required at the joints because UNIBESTOS' long, interlacing fibers form positive heat seals.

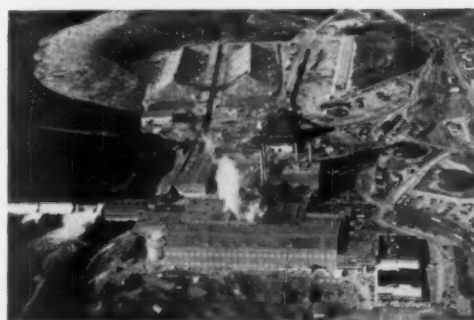
Unusually durable, Unibestos withstands vibration and impact...remains unaffected by acid and chemical fumes so often encountered in the paper industry...can be removed and reused as often as necessary.

Greater Efficiency with Unibestos®

Amosite, the well known South African asbestos with the long resilient fibers, gives Unibestos its superior insulating qualities. Heat loss at the joints is minimized due to interlacing of fibers.

Standard Production Sizes

Unibestos Pipe Insulation is regularly made in 3-foot lengths for pipe sizes from 1/2" through 24", in standard thicknesses through 5". Unibestos Block Insulation is made in: 6", 12", 18" or 36" widths and in thicknesses from 1" through 3" in 1/2" increments.



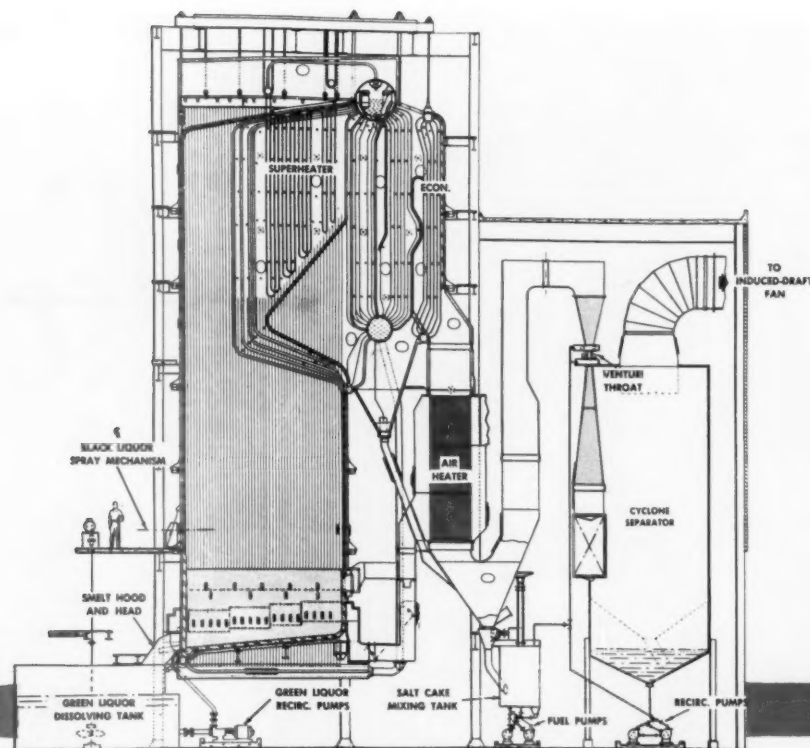
In its multimillion dollar expansion program, the Great Northern Paper Company utilized Unibestos to provide efficient insulation for many processes.

For complete information, write
for descriptive Bulletin 109C



UNION ASBESTOS & RUBBER COMPANY

1111 West Perry Street • Bloomington, Illinois



Venturi Evaporator-Scrubber

(Contact Liquor Evaporator) (Fume Collector)

Installed with B&W Recovery Unit

means Improved Economy

The Babcock & Wilcox Company black-liquor recovery system illustrated above has completed almost three years of continuous trouble-free operation.

An outstanding feature of this installation is the B&W Venturi Evaporator-Scrubber, which combines in one piece of equipment both the concentration of black-liquor and collection of salt cake fume. The three-year operating period has proved the Venturi Evaporator-Scrubber to be completely reliable and highly efficient.

Five recovery units equipped with Venturi Evaporator-Scrubber are now in service. Five additional units ranging in capacity from 30 to 360 pulp tons are currently on order.

The Venturi Evaporator-Scrubber is an important addition to B&W's equipment for black-liquor recovery. B&W can select exactly the right combination for your mill. The Babcock & Wilcox Co., Boiler Div., 161 East 42nd Street, N. Y. C.

Advantages of the B&W Venturi Evaporator-Scrubber unit include:

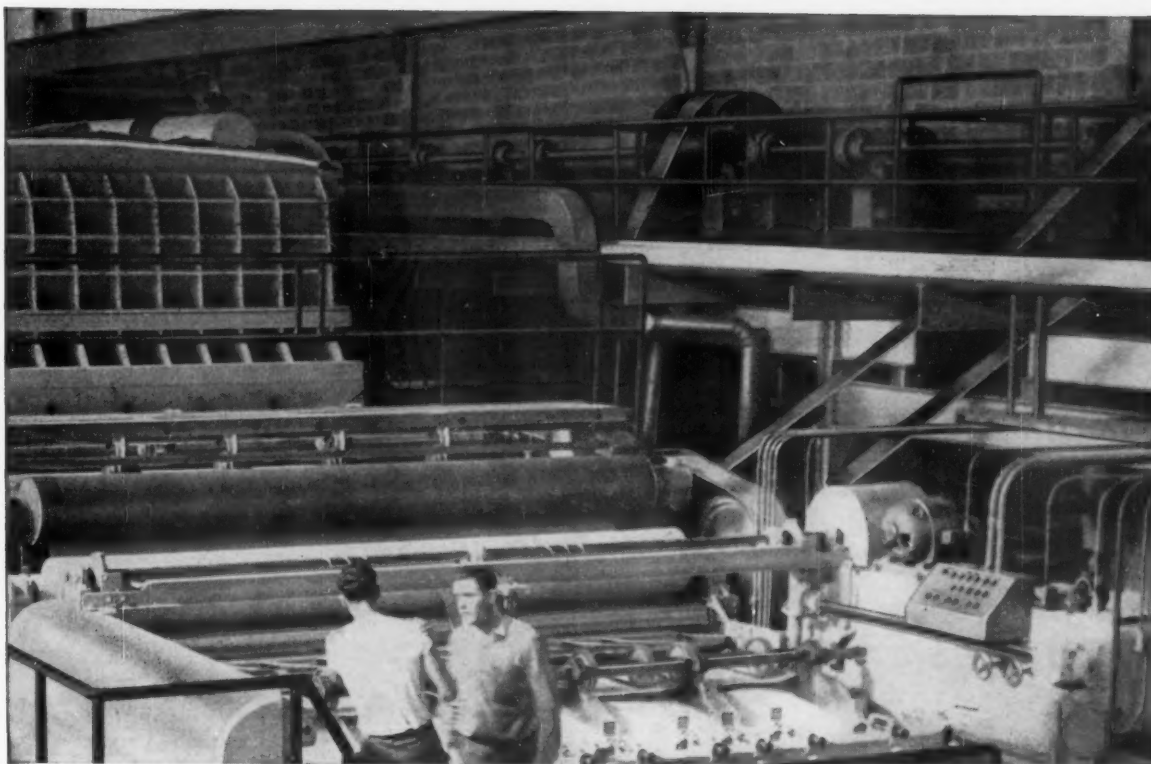
- Simplified Operation
- Low First Cost
- Increases overall Thermal Efficiency
- Efficient use of operating force
- Reduces Maintenance Requirements
- Continuous, High, Fume Collection Efficiency
- Minimum space requirement
- Reduces multiple effect evaporator load

**BABCOCK
& WILCOX**



BOILER
DIVISION

P-787-B



Before you buy Cone Drive Belts compare the advantages of *Tannate flat*

Tannate Flat Leather belting is the ideal belt to use on the lineshaft-flat belt paper machine drive because you can depend upon Tannate belts to:

(1) deliver a smooth flow of power and maintain constant draws with few adjustments.

(2) consistently pull the full load between scheduled shutdowns.

(3) operate efficiently at belt speeds ranging up to 6,000 F.P.M. because they are flexible and strong.

(4) conform to the taper of cone pulleys because they are resilient.

(5) withstand water and moist operating conditions as well as high temperatures.

(6) resist deteriorating action of excessive machine oils.

(7) have sufficient lateral rigidity to withstand the action of the shifters.

We'll be glad to give you the complete story on the low cost simplicity and dependability of the paper machine lineshaft-drive with Tannate flat leather belting. For further details write J. E. RHOADS & SONS, 2100 W. Eleventh St., Wilmington 99, Del.

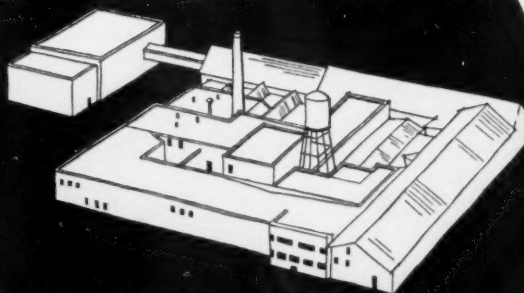
what is *Tannate*® ?

Tannate is the trade name for the *special tanned leather* developed and produced by J. E. Rhoads and Sons especially for the manufacture of flat leather belting. It combines exceptional grip, pliability, elasticity, strength, and durability. It will resist moisture, mineral oils and the fumes of most acids—will withstand high temperatures (212°F. dry, 170°F moist).

RHOADS

INDUSTRIAL LEATHERS

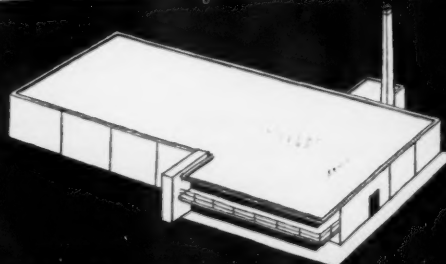
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APPLETON, WISCONSIN

Confidence....in the paper industry

Foresight.....to anticipate changing
conditions and requirements of
the paper industry with new
manufacturing facilities

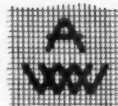


MONTGOMERY, ALABAMA...
IN PRODUCTION SINCE OCTOBER, 1954

Appleton Wires are Good Wires

Appleton Wire Works, Inc.

GENERAL OFFICES, APPLETON, WISCONSIN



INTERNATIONAL WIRE WORKS, MENASHA, WISCONSIN . . . AN AFFILIATED COMPANY SINCE JANUARY, 1955

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SOUTHERN AREA
Call A. M. Taber
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Call L. W. Blight
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NEW YORK & BOSTON AREA
Call C. R. Lombard
New York, LOnacre 3-6440

Du Pont technical assistance for you

When you need assistance in bleaching ground-wood or chemical pulps or in the recovery of waste paper with peroxide, call our service staff for the latest information in the industry.

Combining years of experience, these men are well qualified to help you lay out your proposed new bleachery, show you how to increase your production, or to increase the efficiency of your peroxide bleachery. And backing them

up are the Du Pont research and technical service laboratories.

These facilities are at your call without obligation or expense. Let them show you what peroxides will do for you. Call the Du Pont service man nearest you.

Electrochemicals Department
E. I. du Pont de Nemours & Co. (Inc.)
Wilmington 98, Delaware

DU PONT PEROXIDES

ALBONE®

hydrogen peroxide 35% and 50%

SOLOZONE®

sodium peroxide



REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY



These digesters, of $\frac{7}{8}$ " plate, each 15'6" I.D., weight 32,450 pounds, served in producing the first domestic paper from sugar cane stalk.

The plant, designed and built by Brown & Root, Inc., for Valentine Pulp and Paper Company has daily capacity for approximately 50 tons. The venture is Big in Promise since within 100 miles of Lockport, Louisiana, 750,000 tons of bagasse are available each year and this raw product yields up to 50 percent in finished paper.

Wyatt Metal & Boiler Works is proud to have a part in this promise of converting agricultural waste into useful merchandise.



MANUFACTURERS AND ERECTORS SINCE 1913



Aerial view of Alberni Pulp & Paper Division, MacMillan & Bloedel Limited

MEAD GIVES YOU A DEPENDABLE SOURCE OF PULP SUPPLY

Successful merchandisers of market wood pulp for 35 years, Mead Pulp Sales, Inc., has grown and prospered with many of the mills in the converting trade. Drawing today from the resources of eight great mills, Mead gives you the finest assurance of a dependable source of supply for pulp.

MacMillan & Bloedel Unbleached Sulphate

Particularly representative of this "dependability" is the Alberni Pulp & Paper Division of MacMillan &

Bloedel Limited. The principal supplier of unbleached sulphate to the U.S. market, the Port Alberni, British Columbia, operation has attained that position as a result of progressively increased utilization of its vast natural resources, recognition of the importance of quality, and constant attention to the important factor of service.

Tell us what *your* pulp requirements are, and we'll be glad to have a representative call at your convenience to tell you how we can best serve your needs.

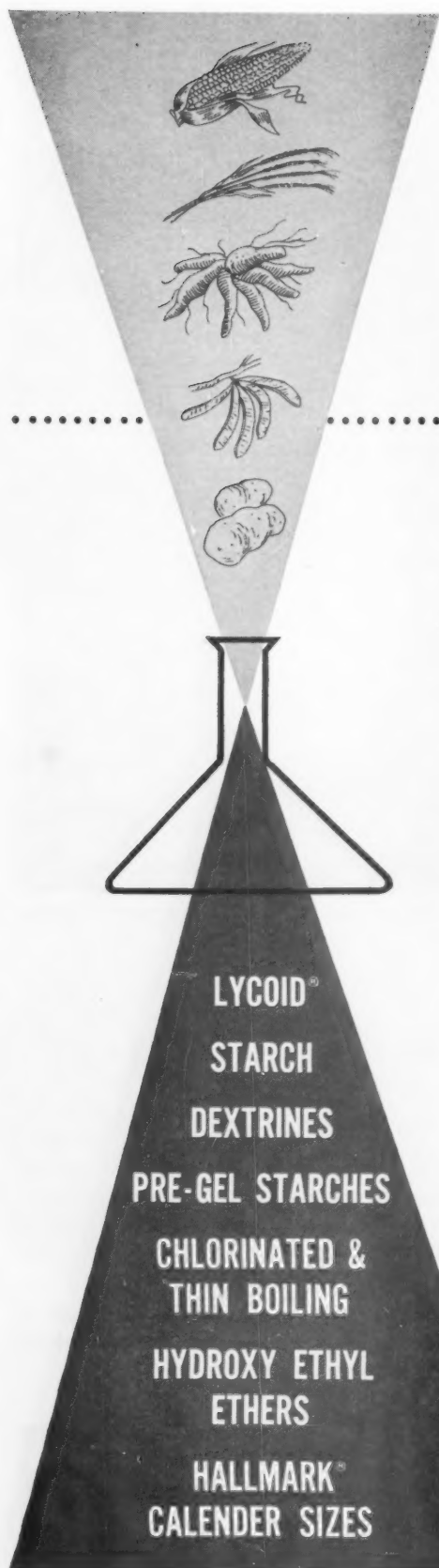
MEAD PULP SALES, INC. • Distributors of Wood Pulp

BLEACHED AND UNBLEACHED CHEMICAL AND MECHANICAL WOOD PULP

230 PARK AVENUE, NEW YORK 17 • 20 NORTH WACKER DRIVE, CHICAGO 6

118 WEST FIRST STREET, DAYTON 2





ONLY STEIN HALL OFFERS THIS COMPLETE SELECTION OF COLLOIDS

FOR YOUR PAPER MILL NEEDS

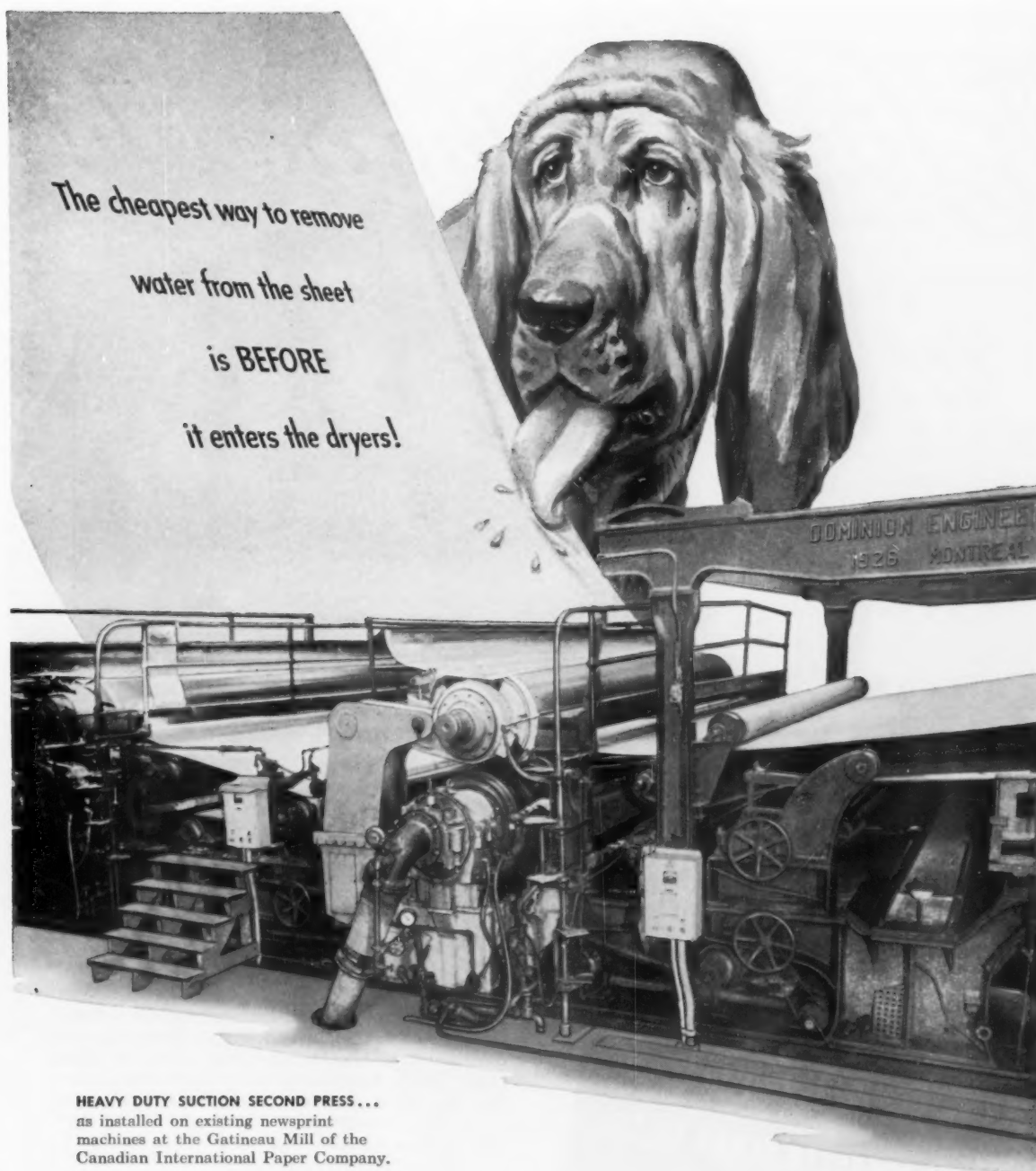
Stein Hall's world-wide resources of all the major natural colloids guarantees you a completely unbiased choice for your paper mill needs.

To help guide you in your selection, Stein Hall can put at your disposal the complete facilities of a highly experienced sales-service department. These facilities can help guide you to the particular product for your particular need. No matter how specialized your individual requirements, a Stein Hall product can be adapted to your needs.

Whether you make the selection yourself or take advantage of our offer of assistance, you have a freedom of choice unavailable anywhere else.

For samples or further information, write the Paper Mills Department PP-4.





The cheapest way to remove
water from the sheet
is BEFORE
it enters the dryers!

HEAVY DUTY SUCTION SECOND PRESS...
as installed on existing newsprint
machines at the Gatineau Mill of the
Canadian International Paper Company.

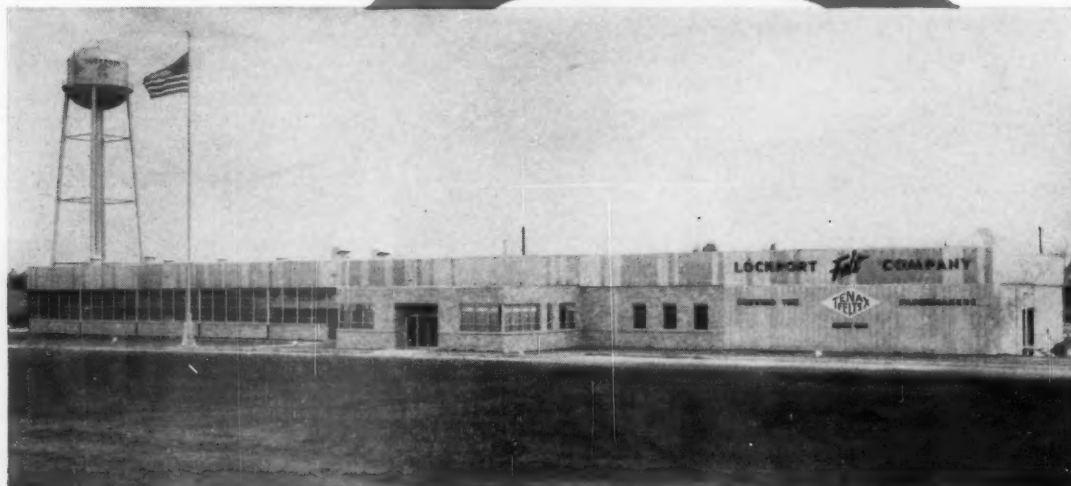
The use of corrosion resistant steel shells for rubber covered suction press rolls has made possible higher nip pressures and the use of larger diameter granite top press rolls and oil hydraulic loading. These improvements also provide a more compact arrangement and easier control. After the installation of this unit, a comparison of the new moisture condi-

tions with those of the original second press showed an increase in water removed of more than half. This results in a sheet entering the dryers about 2% more dry—that is, with 9% less water to be evaporated. A considerable advance in operating efficiency with lower production costs has thus been obtained.



DOMINION ENGINEERING
COMPANY LIMITED
PAPER DIVISION
MONTREAL TORONTO WINNIPEG VANCOUVER

First in the South!



New Lockport Felt Mill at Starkville, Miss.

- PLANNED IN 1953
- GROUND BROKEN IN 1954
- COMPLETED IN 1955
- PRODUCED TENAX FELTS IN 1955

Years-ahead Service to the Paper Industry

Keeping ahead of the paper industry's needs is a basic policy at Lockport Felt. After World War II, when paper concentrated 90% of its expansion in the Southern United States, Lockport turned its sights there, too. Now, the task of providing a new TENAX FELT Mill in the South is completed. The first paper machine felt ever woven in the South was delivered from the Starkville Mill in December of 1955.

Lockport is proud of this "first" . . . of this new ability to offer faster, more direct, more efficient service to the Southern paper industry. Starkville benefits all paper-makers, by freeing production capacity at the Newfane Mill. Recently expanded, with new equipment in many departments, the Newfane Mill is providing better-than-ever service to paper and board makers everywhere in the world.

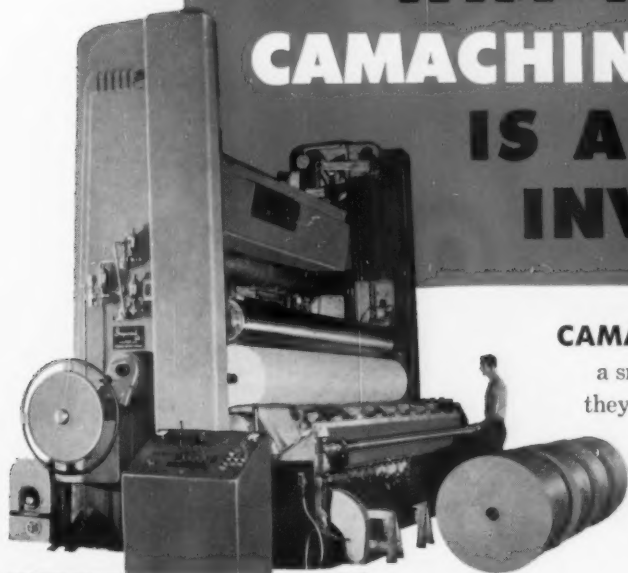
LOCKPORT FELT COMPANY

NEWFANE, NEW YORK

STARKVILLE, MISSISSIPPI

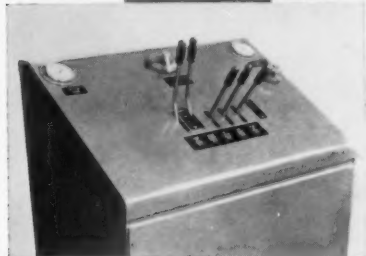
Serving the Paper Makers Since 1891





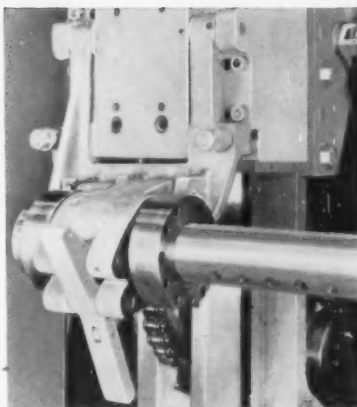
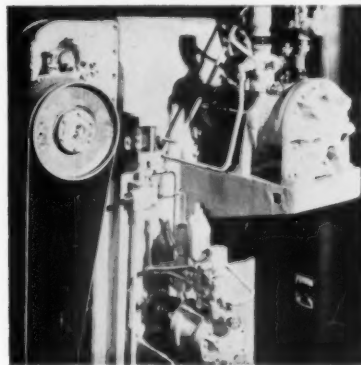
WHY THE CAMACHINE IMPERIAL IS A SOUND INVESTMENT...

CAMACHINE IMPERIAL winders represent only a small fraction of the total cost of the mills which they serve. Yet, the **IMPERIAL** can protect profits on your entire plant operation by assuring matchless performance at the winding end of even the fastest paper machine. Exceptional speed, dependability, ease-of-operation and high quality of output are built into the **IMPERIAL**. Following are a few of the many important new features of **IMPERIAL** winders.

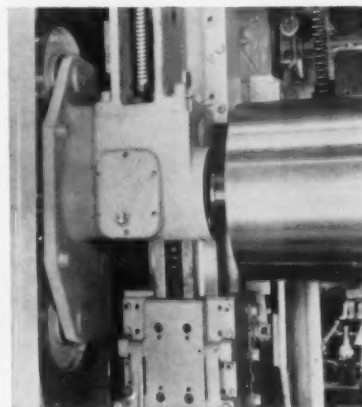


Centralized Controls . . . All hydraulic and pneumatic controls and pressure meters are concentrated in one conveniently designed control station. What does this mean to you? Easier operation, plus the fast, dependable control so necessary when running at high speeds.

Hydraulic Lifts . . . Hydraulically operated motors raise and lower both the riding roll and rewind shaft bearing holders, quickly, with finger tip control. Your profits are protected because costly downtime between sets is kept at a minimum.



Rewind Shaft Bearing Holders . . . The rewind shaft bearing holders are "spring cushion" mounted both vertically and horizontally to absorb shock and strain caused by bent shafts. To you this means smoother action—prolonged shaft and holder life.



Riding Roll Suspension . . . Provisions in the mounting design permit the riding roll to tilt 1" lengthwise, providing optimum pressure and torque distribution. Finished rolls are wound with uniform density . . . perfect for shipment or further processing.

THE CAMACHINE IMPERIAL provides ability to stay well ahead of today's fastest paper machines...with reserve capacity to meet tomorrow's increased demands. Write for complete information.

CAMERON MACHINE COMPANY

61 Poplar Street, Brooklyn 1, N. Y.

We look forward to
greeting YOU at—

**37TH ANNUAL
CONVENTION**

**AMERICAN
PULP and PAPER MILL
SUPERINTENDENTS
ASSOCIATION**

**JUNE 12 to 14
LAKE PLACID CLUB
ESSEX COUNTY, N.Y.**

If you make papers where appearance counts—wallpaper, publication stock, wrappers, cartons—TITANOX white titanium dioxide pigments are for you.

To reduce show-through, the use of TITANOX is imperative. To afford contrast—TITANOX. To increase visibility and legibility—again TITANOX. No matter what its purpose, paper pigmented with TITANOX is better-looking paper. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; Atlanta 5; Boston 6; Chicago 3; Cleveland 15; Houston 2; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 14, Ore.; San Francisco 7. In Canada: Canadian Titanium Pigments Limited, Montreal 2; Toronto 1.

Titanium Pigment Corporation is a subsidiary of National Lead Company

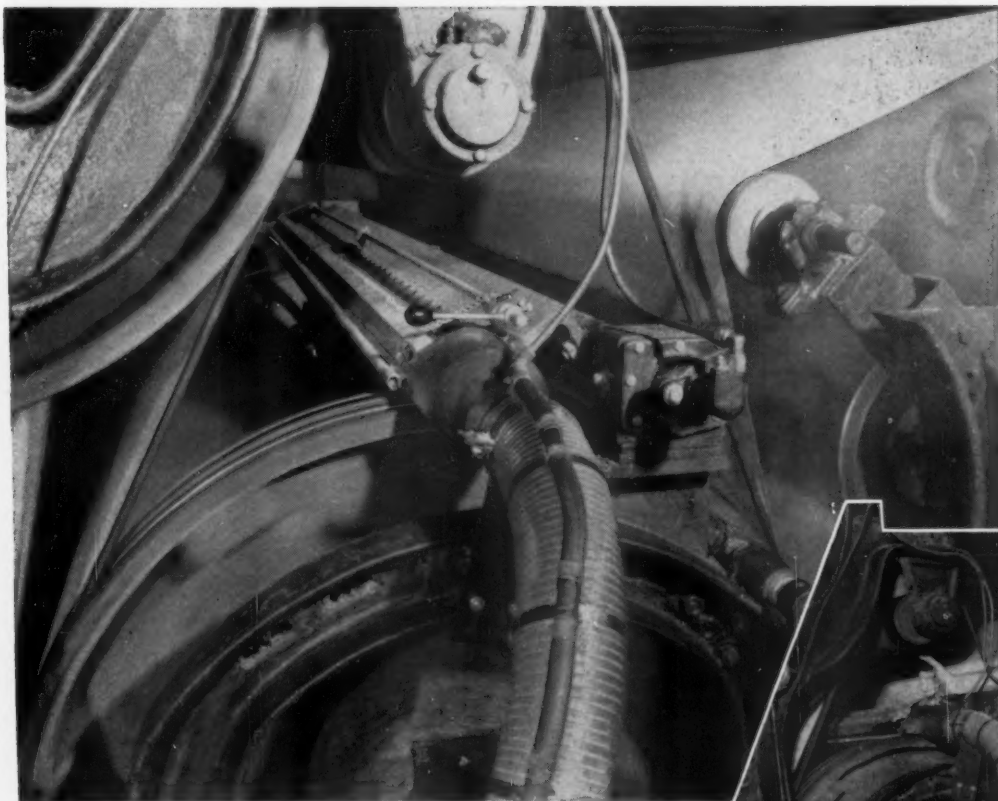
look...

it's

TITANOX®



3647-A



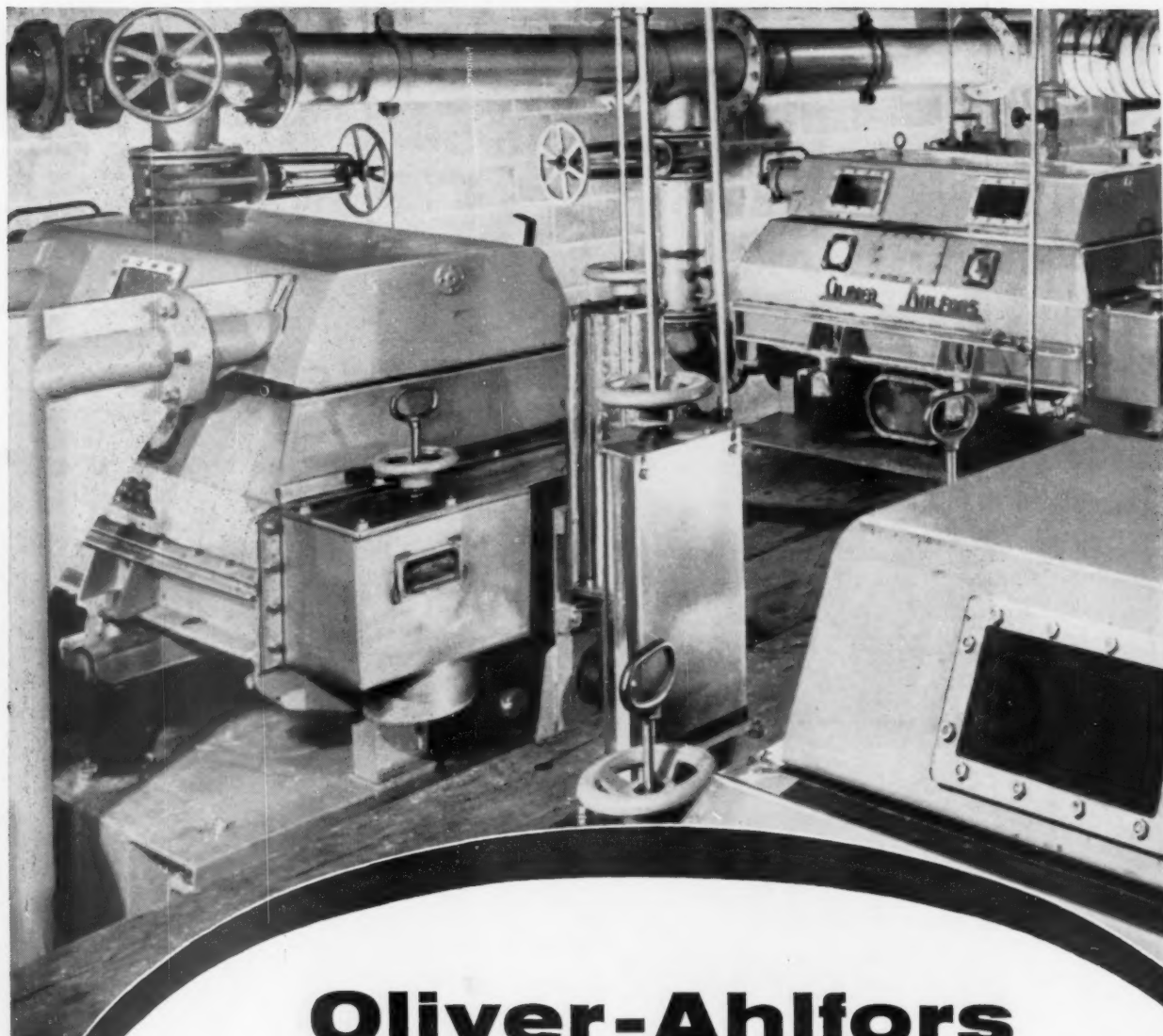
LODDING FUZZ REMOVER...

**in successful operation, all the
way from board to bible paper.**

When the Lodding Fuzz Remover was installed in this mill a paper maker's age-old problem was solved. A series of jets scientifically put to work was the answer to the fuzz nuisance in the air and on the sheet.

Result: a better sheet, free from scabs and lint.

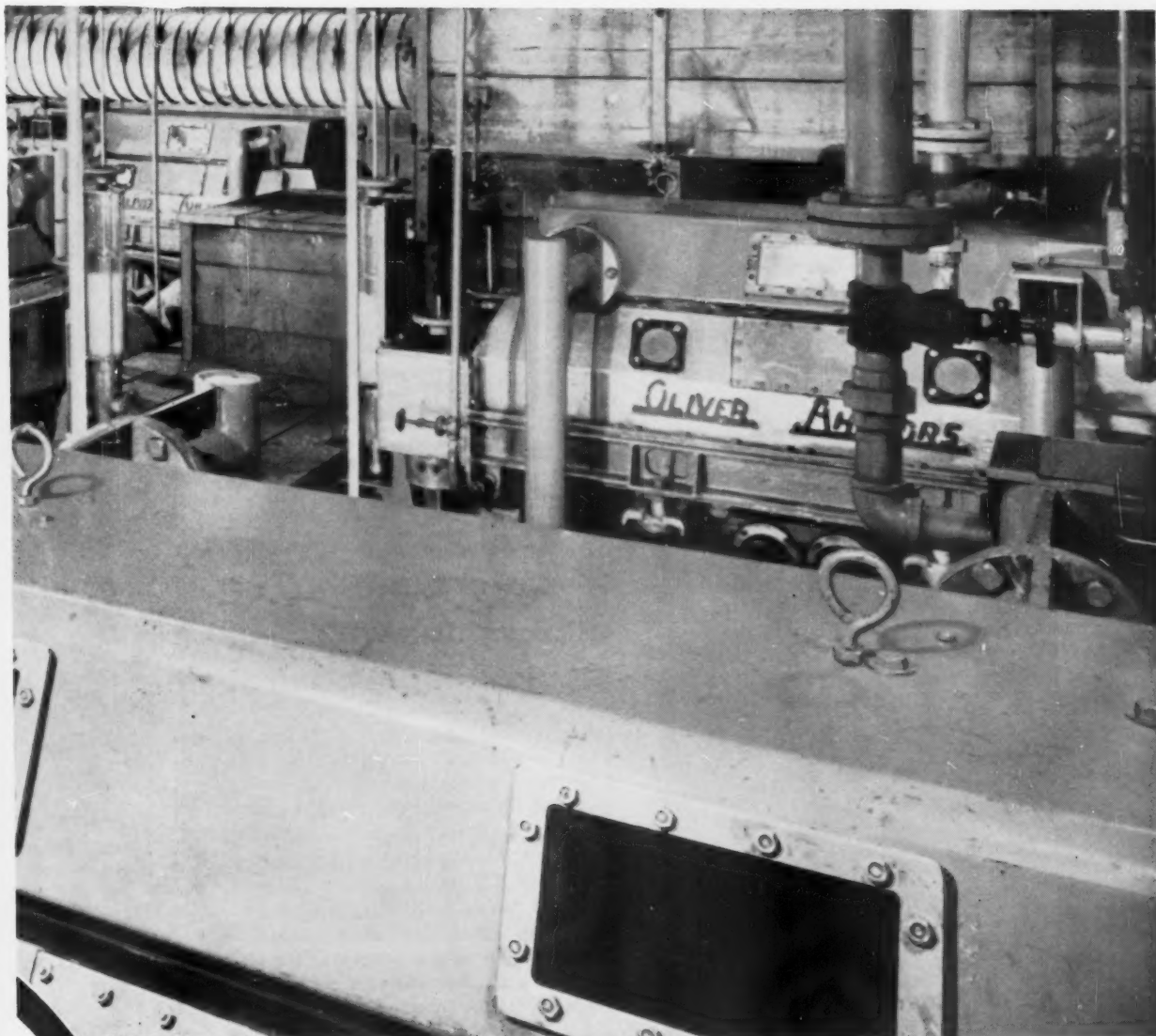
LODDING ENGINEERING CORPORATION
WORCESTER • MASSACHUSETTS



**Oliver-Ahlfors
Screens**

**Handle 165 Tons of
Paper Pulps Daily**

**in Large Washington Kraft
Mill**



This compact installation of Oliver-Ahlfors Pulp Screens is located in the St. Regis Paper Company's Tacoma, Washington mill. 165 tons of fully bleached kraft pulp are handled by these screens daily. Of the units shown, five are for primary and one for secondary screening.

The Oliver-Ahlfors Screen differs from conventional flat screens by operating on the "upflow" principle. Accepted fiber is screened upward through submerged screen plates, while the heav-

ier fiber bundles, dirt and scale settle in the screen vat and are withdrawn through adjustable reject outlets. Automatic hydraulic screenplate cleaning showers and screens are totally enclosed to prevent pulp contamination and also contribute to a clean, dry screen room.

Why not find out how you can benefit with Oliver-Ahlfors "upflow" Pulp Screens? Bulletin No. 750 gives the complete story. For your free copy, write Dorr-Oliver Inc., Stamford, Conn.



DORR-OLIVER
INCORPORATED

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STAMFORD • CONNECTICUT • U.S.A.

Beckman / process instruments
Fullerton 1, Calif.

- ☐ Send a pH System Analysis Form which will help me solve a pH problem at our plant.
☐ Send a copy of "Industrial pH Measurement & Control."

Name _____

Firm _____

Street _____

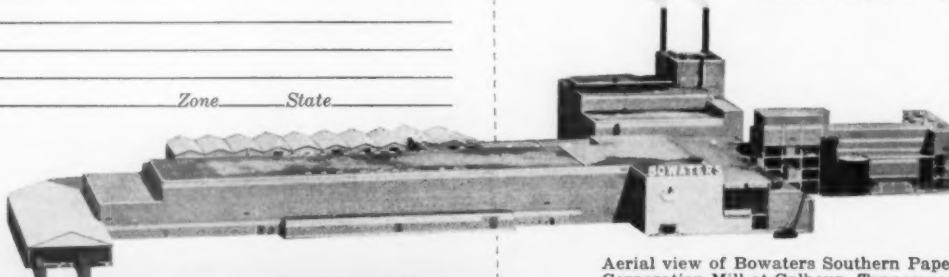
City _____ Zone _____ State _____

N5-56

Free Engineering Service

Beckman Application Engineers will gladly recommend the proper pH measurement and control instrumentation for your process.

Mail the coupon today.



Aerial view of Bowaters Southern Paper Corporation Mill at Calhoun, Tennessee.

Bowaters tames sticky pitch with Beckman pH control

Representing a \$60 million investment, the giant Bowaters Southern Paper Corporation mill at Calhoun, Tennessee gulps pine logs by the millions and spins out 160,000 tons of newsprint annually for newspapers of 128 cities throughout the South.

Until recently, the abundant, fast-growing southern pine was considered useless for newsprint because of its resinous nature. At Bowaters, Beckman pH instrumentation helps subdue pitch by continuously monitoring and controlling the pH of the pulp stock solution where it flows through the headbox onto the paper making machines. Liquid alum is precisely and automatically added to keep the solution at a predetermined pH. This is critical: if the close pH control is lost, the sticky pitch is free to do its damage... clogged fourdrinier wire, ruinous foam and inevitable shutdown.

Accurate, reliable and rugged, Beckman pH measurement and control instrumentation is employed in hundreds of processes where pH is a key to increased production, better quality control, less waste of costly chemicals and fewer maintenance problems. To learn how Beckman can help you, mail the coupon today or write to Beckman Instruments, Inc., Fullerton, California.



Bowaters utility man Eldie Dickey checks recorder for critical pH reading of pulp stock solution.



Beckman model W pH meter

Beckman / process instruments



Paper says "thank you" too

Nothing reveals good taste as does fine paper . . . and it's no longer the luxury it once was. Modern papermaking techniques—for example, improved bleaching methods—have helped make better paper at lower cost. And as demand increases for paper, so are the industry's requirements greater for caustic soda, chlorine, ammonia and other chemicals.

To anticipate and provide for the growing chemical needs of the pulp and paper industry, Olin Mathieson has a forward-looking program of *coordinated planning and production*. This assures paper producers of the availability of chemical raw materials regard-

less of changing market conditions or added requirements for plant expansions.

At present, a growing number of chemical consumers are coordinating their planning and production with Olin Mathieson . . . America's prime producer of basic industrial chemicals. Olin Mathieson's long experience and familiarity with the broad market picture can prove invaluable in *your* planning. Why not consult with us . . . now?

MATHIESON CHEMICALS

OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

3795



INORGANIC CHEMICALS: Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Potash • Caustic Soda • Chlorine • Hydrazine and Derivatives • Hypochlorite Products • Muriatic Acid • Nitrate of Soda • Nitric Acid • Soda Ash • Sodium Chlorite Products • Sulphate of Alumina • Sulphur (Processed) • Sulphuric Acid
ORGANIC CHEMICALS: Ethylene Oxide • Ethylene Glycols • Polyethylene Glycols • Glycol Ether Solvents • Ethylene Dichloride • Dichloroethyl ether • Formaldehyde
Methanol • Sodium Methylate • Hexamine • Ethylene Diamine • Polyamines • Ethanolamines • Trichlorobenzene • Polychlorobenzene • Trichlorophenol



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R.T. VANDERBILT CO. INC.

230 Park Avenue, New York 17, N. Y.

PULP & PAPER'S "BLUE RIBBON" PANEL RESUMES

This is the second and final article in which this unique method of conducting a round table (or "multiple interviewing") is used. Because labor and employee relations are "tender spots" in management affairs—simply because they are so frequently seized upon and distorted for newspaper headlines or selfish purposes, our readers will readily understand why PULP & PAPER promised the 14 panel members that their names would not be identified with their "quotes" which appear in the article. Views expressed in this article—as in last month's—are strictly individual views. It would be impossible to clearly indicate majority or minority views.

PULP & PAPER expresses the appreciation for its readers to these participants in what panel members agreed was a constructive service to this industry.

The panel, picked by PULP & PAPER, represents companies from Maine to California, Florida to British Columbia. They are men of various ranks, but all regarded highly, nationally or locally, for their conduct of industrial relations.

PULP & PAPER proudly presents
its panel:

MAXWELL D. BARDEEN
President
Lee Paper Co.

ROBERT E. BUNDY
Executive Vice President
Fibreboard Products Inc.

J. M. CONWAY
President and General Manager
Charmin Paper Mills, Inc.

T. T. DUNN
Vice President i/c Manufacturing
Union Bag & Paper Corp.

HARRISON F. DUNNING
Vice President i/c Manufacturing
Scott Paper Co.

M. J. FOLEY
President
Powell River Co.

RUDOLPH T. GREEP
Production Manager
S. D. Warren Co.

GEORGE R. KOONS
Industrial Relations Manager
Bowaters Southern Paper Corp.

CHARLES H. REESE
Vice President i/c Manufacturing
Nekoosa-Edwards Paper Co., Inc.

CHARLES R. SEABORNE
Executive Vice President
Thilmany Pulp & Paper Co.

ALEX SMALLEY
Vice Pres. i/c Industrial Relations
St. Regis Paper Co.

MARVIN W. SWAIM
1st Vice Pres. and General Mgr.
Alton Box Board Co.

WILLIAM T. WEBSTER
Vice President
National Container Corp.

A. D. WILKINSON
Director of Industrial Relations
Kimberly-Clark Corp.

Pro and Con—Duties of a Manager

...as they apply to his relations with employees, and with
unions. More about bargaining attitudes and tactics

● In this final chapter of the PULP & PAPER management panel's discussion of employee-management and union-management relations, emphasis is on the kind of leadership a manager should give to employees—in a quite different way than the unions give them leadership.

And, again, in this chapter, the panel members further explain their attitudes and practices in bargaining negotiations with the unions.

Industry readers will readily understand why this unique panel technique devised by PULP & PAPER is a "must." Labor and employee relations are "tender spots."

Newspapers, politicians, crusaders for causes and even some union leaders will seize upon statements on industrial relations and distort them for headlines, for propaganda purposes, to embarrass "big business" or its leaders, individually. Who can for-

get the distortions of Defense Secretary Wilson's blunt but colorful ways of expressing himself? For example, his famous comparison of two kinds of hounds.

Today an industrial manager with the best of good will and intentions towards labor, often would need to have most statements he made on industrial relations cleared with his directors, gone over by experts for possible hidden "traps," he might want to have a conference with an intelligent and cooperative union executive. Under these conditions, it probably would have been virtually impossible to present such an article as this.

These quotes are scattered—sometimes a panel member has "the floor" more than once in the following dialogue.

As explained last month, the "springboard" for these comments was the article "What's Wrong with

Managers?" published in January, reporting views of Colin Gardner, III, vice pres. and gen. mgr., Gardner Board & Gardner Co., which suggested management take a new look at bargaining tactics with unions and opportunities to be leaders themselves to their employees.

These are strictly informal statements. No one is quoted by name. Panel members speak individually, and independently. No attempt is made to associate their views. So here goes again:

NEED FOR LEADERSHIP—"There is a definite obligation by management to the employee, apart from his union. Too often management is so taken up with its relationships with the unions that it forgets its employees, as human beings. Insistence upon responsible union leadership and more consideration to the employer-em-

ploye relationship could alleviate many problems."

"There is still urgent need for constructive, positive, understanding leadership of people, in industrial management—not alone at the bargaining table but day in and day out. We haven't yet begun to tap the potential contribution that people will make under real understanding leadership. It isn't easy—it takes big men and thoughtful, considerate effort to do the job, but it's tremendously worthwhile. In general, the action and attitudes at the bargaining table seem to be pretty much a direct reflection of the kind of leadership management practices in its relationship with its people every day."

MEET YOUR EMPLOYEES—"The most important factor in the successful operation of any mill is the men of the operating force and their attitude toward their jobs and management. It is difficult enough in a large organization for management to keep in touch with what men are thinking without top management holding aloof and never meeting with the men or their representatives.

"Any man wants to work for a man whom he can respect, but how can he hold his management in respect if he never meets the key man, the top manager himself?

"It is true that no two managers do the job of employee relations in exactly the same way, but they may obtain equally good results by different methods."

DON'T PASS THE BUCK—"The key to sound business leadership is in the recognition of the dignity of man, whether he is chairman of the board or office boy. If there are managers who feel that bargaining must be entrusted to others, they should realize that they leave a void in the directness of this line of recognition.

"I certainly do not agree with Mr. Gardner's statement, 'The exaggerated claims of union leaders go unchallenged and the public accepts the unions as sole benefactors of labor.' In my experience I have never been confronted with such a situation; and I know a number of others. If Mr. Gardner's implication is correct, then it is caused by personal inattention of top management of industry and industry associations. This laxity creates the impression in the minds of workers and their leaders of management's dislike to sit down across the bargaining table.

"The tenor of Mr. Gardner's remarks gives rise to a misunderstanding that all managers are setting themselves up as a target for sharp-

shooters. The implications are too general, and do not apply to those who have long exhibited their respect for their fellow man.

DON'T DENOUNCE UNIONS

"Business leaders had better realize that denouncing unions is not conducive to friendly relations. Neither does it give credit to human dignity of the union membership or its leaders. An honest, objective, realistic sincerity and recognition of human values are attributes of business leadership which commend the respect of workmen, their leaders and the public."

UNIONS MAY BRING WOE TO WORKERS

"I, for one, am very much disturbed at the present trend wherein the fruits of increased productivity are turned into higher wages for industrial workers. Our great economy was built on the principle that increased productivity resulted in lower costs, which in turn created mass purchasing power.

"We have now departed from this principle, and values derived from an increased productivity are funneled into the pockets of industrial workers, who represent less than one-third of our adult population. The unhappy results, now alarmingly apparent, are drastic impoverishment of the farm economy and of fixed income groups.

"The next unhappy result will penalize the wage earners themselves, who are forcing prices upward to the point where foreign competition will become serious. We see the beginnings of this today, when the best values in many types of manufactured goods and machines are no longer found in the United States."

"The manner in which most industries, and in particular the pulp and paper industry, have been handling their industrial relations has laid them open to the criticisms of Mr. Gardner. Managements' actions in dealing with union relations have not provided real leadership for employees or the community. I am certain that in the past we in our company could have been rightfully accused of this deficiency."

ADMITS COMPANY WAS GUILTY

"A few years ago we had a lengthy strike. This brought to our attention in a forceful manner some of our deficiencies. Since then we have examined in a critical manner our former practices and have developed new conceptions as to how we should proceed in dealings with employees and the unions they choose to represent them.

"While we haven't gone so far that we can say we have adopted the bargaining procedures of General Electric, or as is indicated, Gardner Board and Carton Co., we have reached the point where we make offers that are defensible to the employees and the community. (Ed. note—Mr. Gardner praised G.E.'s new bargaining concept—making a "realistic offer" and sticking to it.) We do not put ourselves in the position where the union is able to bargain us into large monetary concessions. We have also taken our story to employees and community.

A CASE HISTORY—"I remember a number of years ago we voluntarily gave a 5¢ an hour increase to the personnel in one of our plants, because we felt they had earned it and deserved it, and we literally 'caught hell' from the union leaders. They felt it was their job to get the money from us, and if we gave the money voluntarily we put them in an extremely awkward position in terms of justifying their existence to their membership.

"There is always an exception to any set of circumstances, and it seems to me that G-E, in their unusual wisdom and diplomacy, have proved to be that exception this year, because it was common knowledge that the union fully intended to strike G-E unless they got what they wanted—yet G-E came out of the deal without a strike and with virtually the kind of a contract which they felt best for themselves and for their employees."

BARGAINING "DOES NOT AFFECT PRESTIGE"—"The American business man does not put himself in a bad light when he offers less than he knows he will give in the end because rank and file employee and general public inherently understand that if the business man made his final offer at the start there could be no bargaining. In this latter instance, vociferous partisans might try to put the business man in a worse light; would accuse him of refusing to bargain in good faith.

"I really do not think the techniques practiced at the bargaining table have much to do with the 'prestige' of the American businessman. Rather his position depends upon the honesty, sincerity, fairness, and Golden Rule principles exemplified in his words and deeds over a period of time.

"American business philosophy has come a long way in the past 20-30 years. The type of industrial statesmanship and social conscienceness displayed by such companies as

Gardner and General Electric is evident in many other concerns both big and small. To me, it is most gratifying and if management is being motivated in that direction in part by self interest that does not worry me in the least."

LIMITED AS A "CURE-ALL"—"The so-called 'new look' in collective bargaining, of which Lemuel Boulware of General Electric is the principal exponent, requires an objective appraisal. As a cure-all for labor problems, it has limitations and should be undertaken only with full appreciation of these limitations.

"First, this approach can never be adopted without a wealth of information, not only as to what the company is able and willing to do, but also as to what its employees actually want. This approach involves presentation of a complete 'package' program by management which is both an initial and a final position. The company must be prepared to take a shut-down of extended duration as a price for any failure to have correctly evaluated the situation with respect to employee attitudes and employees' basic objective.

"Secondly, this approach is based on the premise that the company wants to provide for its workers essentially those same things which the employees want for themselves, principally fair wages, good working conditions, honest supervision, and equal opportunity for advancement.

"In periods of increasing business, the package proposal presented by management may very well be the equivalent of what a majority of employees feel is a 'good settlement.' However, in periods of declining business or depression, what management can reasonably offer in the area of maintaining wage rates and levels of employment may be far less than what employees want as revealed by the company's own surveys of attitude and opinion.

"Finally, there is the question as to whether employees will actually buy the package, and whether management will actually receive the credit for satisfying the desires of its own people and reap the benefit of resultant goodwill. The assumption made in this approach to collective bargaining is that such an approach by management will be accepted if properly presented to employees. This seems to presuppose that men join unions primarily from economic motivations. However, there is good reason to believe that many employees associate themselves with a union for the psychological benefit of being able to 'tell the boss what they really think' rather than improve wages, hours, etc.

IT MAY DO GOOD—"The 'new look' will have made a real contribution to labor relations if it does nothing more than to promote better preparation and analyses by management as a prelude to bargaining. To regard it as a panacea for all bargaining problems is probably dangerous and erroneous.

NO ARGUMENT ON THIS POINT

"We could not argue against Mr. Gardner's observation that management should be objective and its responsibility is to provide 'genuine leadership' to employees. Progressive management, which is attuned to the times and to changing conditions, both sociologically and technologically, does provide 'genuine leadership.'

"But businessmen must at the same time assume other responsibilities. These involve operating at a profit, keeping a plant modern and competitive, satisfying customers and stockholders, and the several other publics with which any business must deal—all of which in the long run benefits the employees.

THE UNION VIEWPOINT—"On the other hand, spokesmen for organized groups are concerned primarily with the immediate welfare of those for whom they speak and the preservation of the unions, and quite often their arguments in behalf of these represent an appeal to emotions rather than to logic. The dues-paying members of organized groups expect their spokesmen at the bargaining table to represent their particular individual interests, and we are quite sure that the average member feels that management is capable of protecting its investment and of satisfying customers and stockholders.

THE PUBLIC VIEWPOINT—"Unfortunately, Mr. Gardner is correct in his statement that a large percentage of the public accepts the union as sole benefactors of labor. This is however not because of what takes place at the bargaining table. The principal reason is that the general public is not familiar with the complexities of business management; has too little knowledge of business economics and thus is suspicious of what it does not understand. This suspicion, coupled with the fact that the hierarchy of organized labor exploits every gain made by employees as a labor victory, makes it easy for an uninformed public to be convinced that unions are the real champions of employees."

SIMILAR DEDUCTION—"Unions are primarily solely interested in gaining advantages for workers. They

have no compelling interest in stockholders, customers, or public. Management must direct its efforts with equal diligence in all directions, not only for workers. A manager must prepare himself to know what is a reasonable offer, based on every detail of knowledge."

"Going into a bargaining meeting with a fair offer and remaining adamant may cause more resentment than the present common practice.

STEP UP COMMUNICATIONS

"The answer probably is in pre-negotiation communications. I feel that companies should step up their communications with their employees in the six months prior to the contract reopening time. The employees should be given all the results of recent contract settlements in the industry. They should be given the situation of the company and they should be practically told by inference where the company will settle. Nevertheless it will remain necessary to take a position which can be moved from as negotiations start.

"Management must win employee's respect by running a good profitable plant and thereby give secure employment. Management must also give leadership—in good thoughts and good citizenship. The example will certainly be appreciated, known and respected by the employees."

WHERE GOOD BARGAINING STARTS

"Good bargaining does not start at the bargaining table, but in the relationships all through the year with the personnel. The unions are not and never have been a solid entity. They do not always have good leadership. The membership as often as not looks to the 'big boss' for guidance. If he does not have their confidence it is too late at the annual wage meeting.

"A good manager has prepared a fair statement of facts and figures in advance, does not go into the meeting with a negative attitude but a positive one, listens to requests with an open mind, and analyzes requests before presenting any counter proposition.

"I don't think he should present a program before hearing theirs, as I've often been told by union representatives; 'We have to take something back to the union hall.' This may sound like relinquishing some leadership to the union leaders, but it is better to have the leaders present the company to the membership in a favorable light than to be described always as an arbitrary group that says 'Take it or leave it!'

BE TRUE TO YOURSELF—"As companies grow larger, a thousand employees and up, the problem of know-

ing a large percentage becomes greater. Also, the larger the community, the greater the task. The more successful the business, the easier it is to be 'fair' to the employee without jeopardizing the company. 'This above all, to thine own self be true' does work in business."

"UNIONS HAVE GREAT RESPONSIBILITY to represent their members fairly and honestly. Unions should be held responsible to the same degree as management. Management should see to it that unions do assume this responsibility.

"As for General Electric, I understand it has capitalized substantially on its sounder approach and is getting a head start on others."

"I have always advocated a first management offer based on the company economic status. Minor concessions may be required, if bargained in good faith. But the basic program is based on facts, and employees can look with confidence on management. This approach has enabled us to reach speedy agreements and maintain a heavy negotiations schedule."

"An offer based on knowledge of every possible detail, basically means presenting an offer for the benefit of the worker. It is true that the negotiator must be somewhat of a technician. How else can he be prepared to present facts clearly and question statements which may not be based on facts? He has the responsibility of arriving at an agreement which is to the interest of several parties.

"No capable negotiator would permit to go unchallenged a hint that he is anti-worker. His efforts are directed toward gaining the confidence of employees. I do not believe that exaggerated claims of union leaders go unchallenged by all union members; however, extreme care is necessary so that just criticism of a union action cannot be used in attempting to prove that the company is anti-labor.

MAKE IT A "BUSINESS CONFERENCE"—Unions must claim credit for gains made by their members. That is one of the returns workers expect for payment of dues. Years ago I believe it was Mr. Compers who defined it simply as "more." How can it be the reverse when an employer in a union shop *must* make all increases effective through union representatives?

"It appears that Mr. Gardner seeks a new philosophy of negotiating, and a major step would be to minimize the old concept of bargaining and bring negotiations into the area of a business conference, having both sides possess a realistic concept of what is a fair settlement."



New Executive Line-Up at Union Bag

(L to r) ALEXANDER CALDER, Chairman of the Board; ALEXANDER CALDER, JR., President, THOMAS T. "TAD" DUNN, Vice President in charge of manufacturing, and recently elected a Director, and CLARK REYNOLDS, Assistant to the President. Mr. Reynolds, who recently was Manager of Sales Mfg. Control Dept., will coordinate sales and manufacturing and improve communications with the President in fields relating to production and sales flow.

Life Publisher and Panel On Coating Program

Andrew Heiskell, publisher of Life, will address the TAPPI Coating Conference in Philadelphia (May 7-9, Benjamin Franklin Hotel) on 20 years' growth of the magazine, which played such an important part in development of machine coated papers.

F. H. Frost, of S. D. Warren Co., will moderate a synthetic adhesives panel composed of H. M. Annis, Oxford Paper Co., W. H. Aiken, Gardner Board & Carton Co., N. I. Bearse, Champion-International Co., J. E. Wilber, St. Regis Paper Co., and representatives of resin and latex suppliers.

I.P. Starts Up New Machine; Two Others Delayed

Canadian International Paper Co. has announced the startup in March of a new 115,000 tons-per-year Beloit-built kraft paper and board machine at LaTuque, Que., first time the company has produced packaging paper grades.

The parent firm, International Paper Co., announces delays in startup targets for the two new machines which will make its Mobile, Ala., operations the world's biggest. Delays in steel deliveries caused this revision—the 105,000-ton newsprint machine will start up in September; the 100,000-ton kraft machine in October.

Georgia-Pacific Makes Oregon Plans

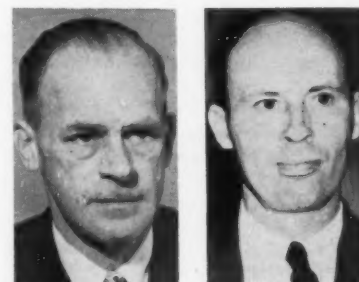
Georgia-Pacific Plywood Co. is making its pulp and paper manufacturing debut through Georgia-Pacific Paper Co., a recently established wholly-owned subsidiary.

It has announced plans for immediate construction of a 250-ton kraft pulp-paper-paperboard mill near Toledo, Ore.

Owen R. Cheatham, president of the parent organization, disclosed that H. Stuart Daniels has been named president of the subsidiary. He resigned his positions of executive vice president and general sales manager of Union Bag & Paper Corp. He currently heads Kraft Paper Assn. as president and has twice been president of Paper Bag Institute.

G-P Plywood owns an estimated 4 billion bd. ft. of timber in Oregon and holds preliminary award for 7.5 billion feet of U.S. Forest Service timber in Alaska.

W. J. Shelton, formerly in charge of pulp manufacturing at Longview Fibre Co., Longview, Wash., has been



H. STUART DANIELS (left), new Pres. of Georgia-Pacific Paper Co., moves to Portland, Ore., in April. W. J. (BILL) SHELTON (right), former head of pulp mfg. at Longview Fibre Co., is newly named Res. Mgr. of the Georgia-Pacific mill-to-be at Toledo, Ore.

named resident manager of the new Toledo mill. Sandwell & Co., consulting engineering firm of Seattle and Vancouver, B.C., is doing the preliminary engineering.

Mr. Daniels will establish his headquarters at Portland early in April.

Budget: \$1,300,000,000

Pulp and paper industry will spend over
\$1 billion for expansion in 1956-1957

● Expansion in any industry makes news and the latest news on expansion in the pulp and paper industry, according to a survey by Morris C. Dobrow, executive secretary of the Writing Paper Mfrs. Assn., is that more than one-and-a-third billion dollars will be spent in the next two years.

Here are some newest announcements:

Columbia Cellulose Co. plans to increase substantially capacity of its Prince Rupert, B.C., mill and to diversify production, according to Wentworth Brown, vice president and general manager. Since start-up in 1951, daily capacity has been upped from 100 tons to 300 tons. Annual capacity is around 102,000 tons of acetate pulp. This figure will be increased 10% to 25% within the next five years.

SIDNEY MILL'S EXPANSION—Sidney Roofing & Paper Co. has been in Victoria, B.C., since its inception in 1920, but may transfer most of its plant to the British Columbia mainland after completion of its new \$5,000,000 mill near Vancouver this year, according to C. A. Craig, vice president and general manager. High freight costs are a factor.

PUBLIC FINANCING will be sought for Alberta's second kraft pulp mill, Antler Wood Products, Ltd., to make kraft and other wood products near White Court, 100 miles north of Edmonton. Contemplated investment will be \$20,000,000. The company has been granted a forest management license.

Directors are William Zeidler, who heads an Edmonton building supply firm; M. A. Miles, of Stahl, Miles & Co., Edmonton investment company; Charles R. Stahl, executive vice president of de Pontet & Co., New York, and H. T. Emery, Edmonton lawyer.

NEW DRIVE TURBINES—MacMillan & Bloedel, Ltd., Vancouver, B.C., has ordered 12 mechanical drive turbines from General Electric for pulp division plant at Port Alberni, B.C.

ANOTHER NEW BRUNSWICK MILL—British and U.S. interests will proceed this summer with a \$65,000,-

000 kraft pulp-newsprint mill of 500 to 700 tons capacity at Lepreau on the south shore of New Brunswick, if New Brunswick Electric Power Commission is able to supply 60,000 hp plus steam. The power company is reported confident this requirement can be met.

The British and U.S. interests involved have acquired the charter of Maritime Pulp & Paper Mills Corp., incorporated about 7 years ago.

Stadler Hurter & Co., Montreal engineers, have been mentioned as probable consultants.

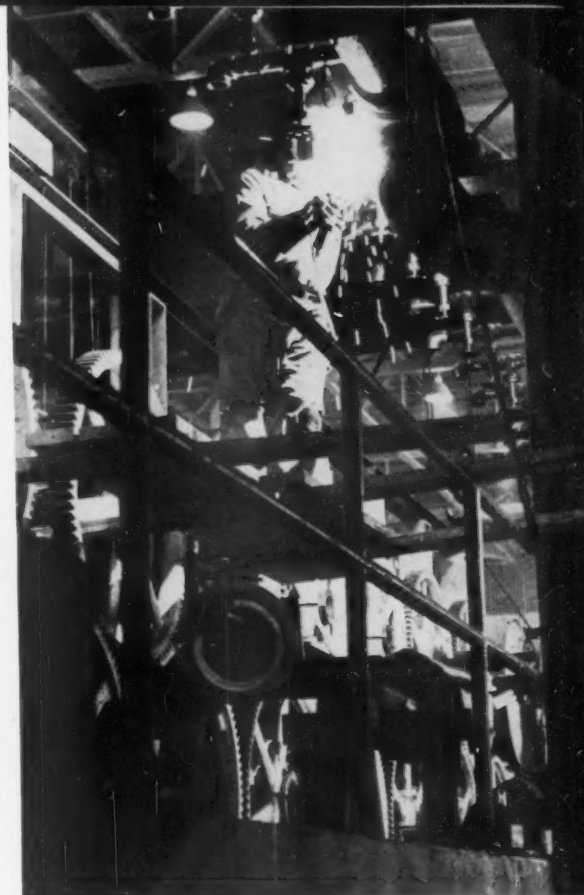
TWO OTHER PROJECTS—Hearst newspaper interests have been negotiating in connection with a proposed newsprint mill in the Canso Straits area of Nova Scotia. The Beaverbrook publishing group in the United Kingdom is reported interested in a mill project in New Brunswick, although not necessarily near Lepreau. Lord Beaverbrook, long famous in British politics, was born in New Brunswick and has extensive interests in the region.

OTHER IP PLANS—In addition to its plans with Long-Bell, International Paper Co. recently announced a 36,000 ton a year corrugated fiber shipping container plant at San Jose, Calif. It will be IP's second converting unit on the West Coast. Equipment will include a modern Langston corrugator.

Flintkote Co. reveals plans for a \$20 million program involving expansion of production facilities, new products and possible acquisition of new business, according to I. J. Harvey, Jr., president.

ROGERS EXPANSION—In a special interview with James Rogers who recently sold his company, J&J Rogers Corp. to David Wollin, a New Jersey industrialist, P&P learned that since acquisition in December Mr. Wollin has spent close to \$1,000,000.

Some of the expansion plans include 2 new Chicago Bridge & Iron digesters (one for semi-chem., the other for increasing sulfite capacity); a new wood handling yard for hardwood; new Bird Jonsson screens, Vibrotors and Bauer Pulp Cleaners.



SPARKS OF PROGRESS. Sight and sound of industry growth are evident in this picture of a welder putting final touches on one of a record number of new paper machines going into mills from Coast to Coast. This shot was snapped in Southern mill.

In the paper mill, said Mr. Rogers, they are revamping a three-stage bleaching system and possibly adding some beaters. They have a new Wells pulper (Aquapulper) and have one Shartle Bros. Hydropulper on order. The cylinder machine is being rebuilt with three new cylinders and they are putting in a 3-way stock system. The company is also buying a 144-in. Fourdrinier with speeds up to 1,200 fpm.

We are going to the ammonia process by early April, he told P&P.

BIG PLANS AT BROWN—A. E. Harold Fair, president of Brown Co., Berlin, N.H., recently announced a whopping \$17,000,000 expansion program, in the pulp, paper and other forest products mills of the company.

"Significant advances ahead of the field" were promised by Mr. Fair. "Our new (Day-Kesting) chlorine dioxide bleach plant will be the first of its kind in North America," he said, adding that "Brown Co.'s new sulfite waste liquor recovery system (using MgO process described elsewhere in this issue) will be the first in the Eastern U.S."

Other projects reported by Mr. Fair are sulfite pulp indirect cooking systems; additional chip handling capacity; additional kraft pulp mill storage; a new kraft raw stock screening

system; new pulp finishing and shipping facilities and a new 7500 kw turbine generator.

Brown also plans additional paper machine capacity, new pulp capacity, a new wood handling system, and new refuse burning and steam generating equipment.

A hint of things to come at Brown is revealed in the Pandia experimental continuous digester which Brown has leased from Black-Clawson.

DIERKS GOES AHEAD—Dierks Paper Co., subsidiary of Dierks Forests, Inc., which made headlines last year when it announced plans for a newsprint mill and then shelved them, is definitely going ahead with plans for a kraft liner board mill at Pine Bluff, Ark.

A new 150-ton a day paper mill will be built by Dierks Lumber Co. at Pine Bluff, Ark., on a 1480-acre site near the old Peers Plantation on the Pine Bluff side of the Arkansas river.

Fred M. Dierks, Jr., vice president of the company, directed engineering tests for the new plant which will be designed by Rust Engineering Co. of Pittsburgh. The \$15 million plant will include five buildings, largest of which will be 650 by 80 ft., and will employ about 200 people.

A 166-in. Bagley-Sewall permanent cantilever Fourdrinier, with a suction couch mounted as an integral part of the cantilever mechanism for quick wire change, has been ordered from Black-Clawson's Paper Machine Division.

The mill is expected to be in operation by Nov., 1957, producing either linerboard, wrapping paper or bag paper—possibly all three. Application has been made to ICC for Missouri Pacific and the DeQueen and Eastern railways to build 19 miles of rail lines into the mill site. According to the application, line will be used to transport pulpwood and wood chips to the mill.

The firm owns an estimated million acres of timber in Oklahoma and Arkansas and has sawmills at Moun-

tain Pine and Dierks, Ark., and at Wright City, Oklahoma. Its forest headquarters is at Broken Bow, Okla.

PLANS AT RED BLUFF, CALIF.—There is no doubt that a new wood-pulp mill in Northern California is in the offing for this area, if the state authorities will give the green light on the plans for handling of effluent. Diamond Match Co. has a forest products program already under way here.



NAT WARDWELL (l), Vice Pres. in charge of Sales, Carthage Machine Co., announces appointment of **JOHN B. CHANDLER** (r), who has covered the industry from Coast to Coast, but in recent years has specialized in the South. Mr. Chandler will be new sales rep. in the South for Carthage, manufacturers of barker drums, chippers and chip screens. He lives at 1735 Ocean Front, Atlantic Beach, Fla.

Chandler Forms New Company

John B. Chandler, Atlantic Beach, Fla., has announced formation of John B. Chandler Co. to service the Southern industry. His firm now represents Cincinnati Rubber Manufacturing Co., Carthage Machine Co., A. P. Wagenknecht Co. suction box covers; and the Sveen Pedersen flotation process.

Barnes for DuPont

Roy M. Barnes, Jr., has been named to a new post, sales promotion manager, in DuPont's Dyes and Chemicals Div. He formerly was in charge of Eastern sales promotion of petroleum chemicals.



"Influx of foreign capital to the industry in British Columbia is necessary. In our own case I'm satisfied and convinced that this is so. The dollars to me lose their nationality when they enter the bloodstream of the economy. The progress and expansion they bring are essential."—**WALTER KOERNER**, president of Alaska Pine & Cellulose, Vancouver, B.C.

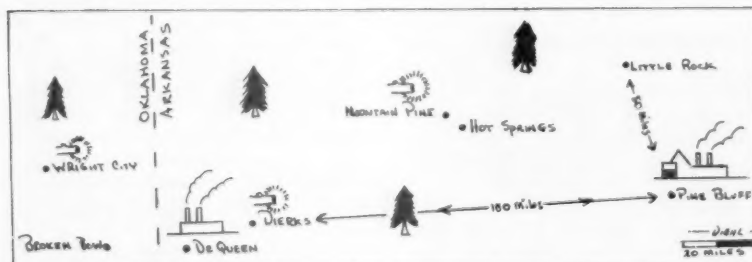
"It has always been a principle of this company to create succession for every important function. We have organization in depth. Our policy is to move men forward to positions or responsibility while they are in the prime of life. Older people should make way."—**H. R. MacMILLAN**, in stepping down as chairman of board, MacMillan & Bloedel.

"The population growth of this country is such that a company has to do 10% better than last year just to stand still."—**FLOYD S. STEINMETZ**, Reynolds Metals' sales training director.

"At the start of 1956, pulp making facilities of the United States are being hard pressed to meet demand, pointing to the likelihood of another record, and certainly to another year of high level accomplishment."—**LAWSON TURCOTTE**, president of Puget Sound Pulp & Timber Co. and of Ketchikan Pulp Co.

"To make pink tissue, add 5 ounces of pink dye to 1,500 lbs. of pulp. To make yellow tissue, use 1½ lbs. of yellow dye. But if you want green, mix 2 ounces of yellow and 6 ounces of blue. Now all you have to do is get the 1,500 lbs. of pulp!"—**J. J. (JAKE) HERB**, 82-yr.-old chairman of Pacific Coast Paper Mills, Bellingham, Wash. (who started as a sweeper in Thilmany P & P, Kaukauna, Wis.)

"It takes 581,000 tons of paper to supply needs of the 2,800,000 people added to the population this year." He added, "It would require two mills, each as large as our Camas plant, running 24 hours a day, just to supply that new market." To provide paper requirements of the 635,000-person increase in the three Pacific Coast states this year "would take a paper mill larger than our Port Townsend plant."—**ALFRED B. LAYTON**, Crown Zellerbach financial-administrative vice president.



DIERKS SOUTHEASTERN HOLDINGS. Map shows location of new Dierks Lumber Co. paper mill at Pine Bluff. Firm's forest headquarters is at Broken Bow. Preserving plant is at DeQueen. Also shown are locations of three sawmills in Arkansas and Oklahoma.

United States Woodpulp Capacity

Annual Capacity as of January 1

	1956	1957	1958
Dissolving—Special	1,112,859	1,162,839	1,262,589
Sulfite Paper Grades	2,841,039	2,911,713	3,065,793
Maximum Bleaching	2,246,802	2,344,775	2,488,775
Sulfate Paper Grades	12,170,083	12,624,785	13,515,160
Maximum Bleaching	4,256,056	4,461,044	4,720,394
Other Chemical	2,504,763	2,772,278	2,929,000
Total Chemical	18,628,744	19,471,615	20,772,542
Total Mechanical	5,021,130	5,459,842	5,625,095
TOTAL WOOD PULP	23,649,874	24,931,457	26,397,637

Source: U.S. Pulp Producers Assn.

Canadian Woodpulp Capacity

Annual Capacity as of January 1

	1956	1957	1958	1959
Dissolving—Special	486,440	497,560	498,060	498,560
Sulfite Paper Grades	2,478,007	2,519,589	2,555,161	2,550,007
Bleached	653,086	665,406	675,406	675,406
Sulfate Paper Grades	1,487,549	1,774,774	2,216,779	2,236,029
Bleached	754,335	753,565	1,197,355	1,220,455
Other Chemical	305,555	303,645	303,645	303,645
Total Chemical	4,755,551	5,095,568	5,573,645	5,588,241
Total Mechanical	6,198,748	6,554,793	6,689,603	6,922,983
TOTAL WOOD PULP	10,954,299	11,650,361	12,263,248	12,511,224

Source: Canadian Pulp & Paper Assn.

Pulp Prices Follow Freight Rates Upward

On the heels of a 6% freight rate increase, to which the American Paper & Pulp Association made no objections and officially considered as justified, the woodpulp industry on Mar. 15 generally brought its prices in line with some increases which had been made the previous quarter.

It was unusual that APPA made no contest of the freight increase, though some individual members objected. After this happened the woodpulp producers generally, who had not increased the previous quarter, announced \$5 boosts.

First increases of \$5 on bleached kraft were by two Swedish companies, Husum and Stora, bringing their specialty grades up to \$155.

Western and Southern U. S. and Canadian companies then raised their bleached kraft \$5, to \$152-155. At press time, unbleached kraft prices were evening out around \$125; some companies rising \$5 a ton to catch up with those who increased the first quarter.

Semi-bleached kraft was settling around \$140 with one exception at \$145. Hardwood bleached kraft was going up to \$150.

Market observers questioned by PULP & PAPER on Mar. 16 opined that apparently sulfite producers would make no more except those

who had not raised prices in the first quarter; although one Swedish company raised its bleached sulfite to \$151 dock. However, one pulpman said it was too early to predict anything on sulfites; one Canadian company, rumored to be raising its unbleached sulfite prices, could precipitate the whole market, he said.

Wisconsin Paper Group Headed by Van Dyck

W. J. Van Dyck, sales mgr. of Badger Paper Mills, Peshtigo, Wis., is newly elected president of the Wisconsin Paper Group, a non-profit organization which for 22 years has pooled carload deliveries throughout the U.S. for 35 Wisconsin paper and paper converting companies.

It makes monthly scheduled shipments to 75 paper market centers and through partial unloading privileges, the group is able to unload small lots, 5 tons and up, in 200 other cities.

Mr. Van Dyck succeeded R. W. Mahony, president of Appleton Coated Paper Co. Elected vice president of the Paper Group was Carl A. Schiebler. Leo O. Schubart, Neenah Paper Co. president, was re-elected secy.-treas. for the 23rd year. Irwin Pearson was retained as exec. secy. for the 23rd year.

Chemicals Column

Pulp and paper—3rd biggest consumer of chemicals

"It is a cellulose clothesline on which many chemicals are hung"

BIOCHEMICALS—The Dow Chemical Co. has opened a new \$1,100,000 laboratory building for research in biochemistry—the chemistry of living things—at Midland, Mich. There are 26 labs in a one-story bldg., with a staff of 64 (to be increased) under Dr. Don D. Irish. Pulp and paper research problems will be carried out here.

BUTYRATE — Eastman Chemical Products Co. is producing a half-second butyrate which is successfully used for coating paper. Its advantages are high gloss with a thin coating, good adhesion over inks, high color stability, alkali resistance, comparatively small quantities needed.

CAUSTIC-CHLORINE—Kaiser Aluminum & Chemical Co., which has entered water treatment for pulp and paper mills with its plant design, first used in an Oregon mill, is also building an \$8,000,000 electrolytic caustic-chlorine plant as part of a \$60,000,000 alumina plant at Gramercy, La. Chlorine capacity will be 26,000 tons a year. The supplemental caustic soda production will be piped in solution direct to the alumina plant.

SURFACTANTS — Drastic and dramatic modifications with surfactants can improve products, reduce processing costs, and enhance business potential. Foster D. Snell, Inc., 29 W. 15th St., N.Y.C. 11, describes the new role of surface chemistry in a booklet, "Explore, Expand, and Diversify with Surface Chemistry at Foster D. Snell, Inc." (available free). Surface active agents are especially effective in altering the properties of surfaces. A specific application cited is in the field of air pollution. And products, whether liquid, gels, powders or solids, lend themselves to improvement with surfactants.

POLYETHYLENE—Du Pont's Polychemicals Dept. offers a new "Alathon" 34 polyethylene resin, designed specifically for film, at 43 cents a lb. in truckload quantities. According to tests "Alathon" 34 will be particularly useful in soft goods packaging and it is expected these same properties will enhance its usefulness as a coating for paper.



The Author*

Do Not Lay Blame Upon Tariffs

There are many more realistic barriers to free trade—much more dangerous ones.

BY RUTH SHALLCROSS

Consulting Economist, Institute of Paper Chemistry

(Written especially for PULP & PAPER)

● Few deny that free world trade is a desirable economic goal. It creates the climate for the division of productive labor on the basis of native ability and resources which best advances the standard of living for all.

If unencumbered by government-imposed barriers, the exchange of goods among countries would balance. Why?

For the simple economic reason that private sellers usually won't produce very long without getting paid for doing so, and paid in an acceptable medium of exchange. Under free trade conditions, exporting would differ very little from doing business within the United States.

But the real world today, even among countries in the so-called "free world," is far from one of free trade—so far that it is best characterized by the Norwegian economist, W. Keilhau, thus:

"Never before in the history of mankind," he wrote in *Principles of Private and Public Planning*, "has there been a time in which politicians have spoken so much in favor of internationalism and done more to check it." [Quoted in Melchior Palyi's *Dollar Dilemma*, p. 143.]

Keilhau wrote this in 1952 and the picture has changed some for the better but the description is still quite accurate. The barriers erected to prevent you from exporting are still formidable enough to make you stop and question as to just how formidable they are in actual practice.

Those of you who have already en-

tered foreign markets with varying degrees of success will no doubt echo the reaction given to me by one producer and confirmed by several others. When asked about the formidability, his answer was one word, "Terrific!"

WHAT ARE THE BARRIERS?—

They are the legal and administrative ones imposed by the U. S. and foreign governments affecting the markets you wish to enter.

The only constitutional restraint on the taxing power of Congress prohibits a tariff on exports. Yet specific exports are restricted presently by embargoes and licenses if their destination is to communist-controlled countries. U. S. foreign aid forces trade discriminations against you when you export by subsidizing foreign governments that depend on exchange and other direct controls to carry out their planning directives. It discriminates against you, first, by taxing you for it, either directly or through inflation and raising your costs thereby; and, second, by subsidizing competing pulp and paper mills.

Note the case of Finland and Austria, reported by Warren B. Bullock in a letter to the National Industrial Conference Board for its discussion of "The Economics of Tariffs," 1953; also note PULP & PAPER, Feb. 1955 issue.

More directly affecting your exporting operations and completely beyond your control are the foreign governmental barriers.

The maze of trade barriers most common to nearly all foreign countries today are: Tariffs; quotas; licenses; embargoes; bilateralism and regional agreements favoring one or more nations and discriminating against others—particularly against U. S. goods; government control of foreign exchange, including the devaluation of currency, the refusal except with rigid restrictions to grant permits for foreign exchange, and the price fixing of the rate of exchange. Each country has other arbitrary regulations and local obstructive red tape peculiar to its economy but space prevents any analysis here by country.

TWO KINDS OF TRADE BARRIERS—

These barriers that greet you when you export divide roughly into two main categories: (1) indirect government controls, such as tariffs which are a consumer tax on specified imported items; and (2) direct government controls, such as rationing imports (quotas) and fixed rates of exchange (et al. mentioned above). "Compensatory taxes" have been enacted by some countries as tariffs after the latter have been bargained away in the diplomatic fanfare for free trade at the GATT meetings.

Separating these two categories is important in order to focus more clearly the world trade picture, and because many people believe that eliminating U. S. tariffs alone will automatically bring free trade. The two categories differ in their effect on foreign trade and a free economy. They are of a different order of magnitude, just as a simple tax differs from progressive taxation.

CURRENCY CONTROLS AND EMBARGOES CHECKMATE TARIFFS

—The confiscation of overseas exchange, justified by a policy of managed money, is reported to have been first introduced to the modern western world by Hitler's government in Germany. The Russians under communism were never allowed to own overseas exchange.

The "effectiveness" of another type of currency control is illustrated by the post-war history of Great Britain. By devaluing the pound sterling to nearly 55% of its previous dollar parity, her producers, with few exceptions, could underbid American exporters and were very little affected by our tariffs.

A further competitive advantage was achieved when discounts from depreciated "blocked" accounts were utilized. After this, if an American exporter could still compete in British markets, it could be prevented, and frequently was, by the utilization of import quotas or embargoes. The persistent exporter (note the case of an important one in the pulp and paper field) began exporting capital.

*This is the third of a series of articles on pulp and paper exporting problems by Dr. Shallcross. Others will follow in future issues. A consultant to pulp and paper companies, and Consulting Economist and Lecturer, The Institute of Paper Chemistry, she received degrees at Nebraska, Bryn Mawr and studied in Europe. She lives at Madison, Ohio. Send questions you may want answered by her to PULP & PAPER, 1791 Howard St., Chicago 26, Ill.

TARIFF BUCABOO IS OVER-RATED—As for the argument that exporters are restrained by American tariffs because foreigners can get dollars to pay for exports only by importing, several facts make this seem doubtful. Duty rates are very low—averaging less than 12%, the lowest in American history; the rates apply to less than 50% of all imports, one of the least restrictive in overall world trade, and foreign currency and exchange controls often nullify these rates in part.

Moreover, ample dollars are being exported in offshore procurements of our Armed Forces abroad, as well as in increased tourist travel—not to speak of loans and gifts.

A SHIFT IN USE OF TARIFFS—Historically, tariffs have been justified as an easy way of taxing nationals for federal revenue, for the protection of young and undeveloped industries, or for industries which must be kept within a national boundary because of defense purposes. In the present cold war the last reason has become the paramount one. Thus the real danger in U. S. tariffs today is not that they appreciably prevent foreign markets from opening up, as some claim, but rather that Congress will turn over permanently its prerogative in setting tariff rates to the State Department where they become pawns in the international diplomatic chess games—meetings of the GATT. There the reductions in rates in the past seem to have served principally the purpose of appeasing those who attack the U. S. tariff and use it as a scape-goat for the trade difficulties caused by their more stringent trade barriers.

The recent case of sulfite wrapping paper being used as such a pawn is an example.

But those who attack the U. S. tariffs rarely do it on these grounds. They approve of the defense program but fail to fit tariffs into it. Thus they place themselves in the awkward position of a Don Quixote fighting windmills.

FOR EXAMPLE, A CASE HISTORY

—Last spring Edgar M. Queeny, chairman of the board of Monsanto Chemical Co. and well known for his contribution to the literature on free enterprise, testified before the Congressional Ways and Means Committee [*Nation's Business*, March, 1955]. He said that the U. S. production of organic chemicals, being vital to the security of the country, could not be kept at the safe levels outlined by the Defense Department if the tariff rates were lowered any further, because his company could not afford to research and build new plants for new products

that could be produced at lower costs abroad. Yet if chemicals follow the pattern of oil, not to research and build new plants necessary to keep production up to Defense requirements could result in the imposition of direct import controls (rationing) which would be far more harmful to the free economy than the small tariff tax on consumers would be.

Based on his authority under the terms of the Trade Agreement Extension Act of 1955, Defense Mobilizer Arthur Flemming has threatened to impose quotas unless 18 private oil companies keep their domestic production up to Defense requirements [*Wall Street Journal*, Sept. 14, 1955, and *London Economist*, Nov. 4, 1955].

If this can be done in the oil industry, it can likewise be done in the chemicals and pulp and paper industries. A government that is spending the major part of its receipts on defense and justifies going further in debt for it (i.e. using the inflationary route to tax) will probably feel justified in using such direct controls as rationing imports to attain defense goals if the indirect ones of taxing imports are bartered away in foreign diplomacy.

DANGEROUS ALTERNATIVE TO TARIFFS—Those producers who are not at the moment threatened by foreign competition of any kind may not be personally affected by the choice of controls and thus unaware of the alternatives forced on others by the present defense economy. In arriving at business decisions, as so often happens in politics, the alternatives are not between something good and something evil—black and white.

The alternatives in the cold war economy force an attainable compromise between good and evil for many American producers today. To many they are between maintaining the mild and easily-managed trade barriers of the historical U. S. tariff variety and opening the door here for more stringent direct controls used by many present governments—governments grown powerful enough during the war to erect a rigid type of economic nationalism that makes international trade extremely difficult and can lead only to increased international tensions.

No. "The malady of international trade is not tariffs," as Frank Chodorov so well points out [*Human Events*, May 5, 1954]. "It is socialism. When a government undertakes to manage and control its internal economy," he adds, "it is compelled to hermetically seal its borders against foreign competition." Within the last two years some checking of the socialistic trend in Europe has taken place. The pros-

perity resulting even from the small shots of economic freedom has been reported in the papers and has been felt by you American exporters of pulp and paper.

A WARNING—A warning is in order, however, to those who feel that time will carry the trend to the free-trade goal line. Don't forget that modern governments do not easily give up the power for planning the economy. The forms and the names may change to appease the most articulate opponents. But only when the public clamor begins to subside for the economic goals, such as "full employment" and the "welfare state," that require government control over the economy, including exchange controls, can one look forward realistically to the prospects of actually achieving free trade.

The reasons for this will be more clearly indicated in a future article in PULP & PAPER on managed money, a deterrent to free trade.

I.P. Sales Record Is Nearly \$800,000,000

Although mergers have now created other paper companies in the \$300- to \$400,000,000 sales bracket, International Paper Co. is still far ahead of all the rest. I.P. set these new industry records in 1955:

Net earnings were \$83,105,016 on total sales of \$796,421,637, compared with 1954 when the company earnings were \$73,489,746 and sales, \$681,171,043. This makes it almost twice as big as its nearest rivals—but not 3 or 4 times, as was the case only a few years ago.

Production of paper, board and market pulp totaled 4,512,962 tons, almost 500,000 tons higher than in 1954. Converted and miscellaneous products increased from 568,185 tons in 1954 to 646,070 in 1955.



Bristol Men for South, East

Appointment of two new District Mgrs. is announced by H. E. Beane, Vice Pres.-Sales, Bristol Co., Waterbury, Conn.: L. B. LUMPKIN (left), Mgr. of Pittsburgh office, after 7 years as Mgr. of Birmingham, Ala., office; W. C. PETERSON (right), new Mgr. of Birmingham office, after 10 years with New York sales force.



SAFETY THEIR GREAT CONCERN. Speaking at Pacific Coast Safety Conference were (l to r): HARRISON F. DUNNING, Vice Pres., Scott Paper Co., who would like to see industry adopt use of "% of perfection" figures instead of frequency rates; ROBERT E. BUNDY, Exec. Vice Pres., Fibreboard, San Francisco, who pled for "injury prevention"; JOHN P. BURKE, Pres.-Secy., Pulp, Sulfite & Paper Mill Workers, Fort Edward, N.Y.; PAUL PHILLIPS, Pres., IBPM, Albany, N.Y.; SID GRIMES, Secy., Coast Mfrs. Assn., who was General Chairman of Seattle meeting.

"Stop Using Those Frequency Rates"

Scott's Dunning urges Coast Safety Conference to adopt new "% of Perfection" approach. Other new ideas debated

● Harrison F. Dunning, v.p. for manufacturing, Scott Paper Co. and Robert E. Bundy, executive v.p. of Fibreboard Products Inc., made two revolutionary recommendations to the 10th annual Labor-Management Safety Conference in Seattle, attended by 500 delegates from 39 Pacific Coast mills.

Mr. DUNNING: "Let's stop using the 'frequency rate' approach to safety statistics—let's adopt the affirmative approach of per cent of perfection."

Mr. BUNDY: "Safety is an overused word. Accident prevention means just about anything. 'Injury prevention' is what our industry is mainly interested in and is a good term we can use."

By the end of three days, March 7-8-9, these ideas had gained many adherents among delegates, and were in fact the subjects of discussion from the floor at the final session.

A team of high-ranking labor and industry speakers, award ceremonies

and visual presentations (plays and movies) combined to make this anniversary meeting memorable. It was the first time delegates from the three Coast states met together.

Coast frequency rates have tumbled from 38.99 to 6.40 in 10 years. Official sponsors are the Pulp, Sulfite and Paper Mill Workers, Paper Makers, and Pacific Coast Association of Pulp & Paper Manufacturers.

THE 10-YR. RECORD—Delegates and speakers paused briefly to give the industry a pat for the 84% reduction in lost-time injuries during 10 years, then pointed to the big job that lies ahead. During the last five years Washington is the only state to show much progress in frequency rate reduction, from 8.94 in 1950 to 4.85 in 1955. For the same years: Oregon 8.41 vs. 8.00; Calif. 9.19 vs. 9.19.

Oscar Robertson of the Paper

Makers (Crown Z mill), Camas, Wash., prepared the 10-year progress report. In actual injuries, the number dropped from 1078 to 291 per year in the 39 member mills. "As a group, the coast mills had a frequency rate of 6.40 in 1955," Mr. Robertson said. "Compared to the rest of the U.S., with 331 mills reporting a rate of 9.4, we are well below the average."

S. W. Grimes, secy. of the Pacific Coast Association, was general chairman. First day co-chairmen from Washington were Bob Gilmore, Rayonier, and John Sherman, Pulp, Sulfite & Paper Mill Workers; second day from Oregon—Al. E. Brown, Paper Makers, and Nicholas Chicherin, Weyerhaeuser's Springfield Mill; third day from California, were Gene Ridings, Vernon Div., Fibreboard, and Ivor Isaacson, PS&PMW.

URGES CLOSE LOOK AT METHODS—Mr. Bundy asked the delegates to return to their mills and to find out everything that is outdated, and then to correct and modernize the parts of the prevention programs that need working over. He asked, "Have you rotated the chairmanship of the mill safety committees? Have men being promoted been sufficiently a part of the safety program? Have those people who set up the programs been sufficiently clear on the objectives of those programs?"

To improve the annual safety conferences, he suggested each mill produce a suggestion, ask a question,



SAFETY AWARDS. (Left) Weyerhaeuser, Springfield, Ore., topped Oregon mills and won award. J. O. JULSON, Res. Mgr. (l), and NICK CHICHERIN, Safety and Personnel Mgr. (Right) Best five-year improvement award went to Longview Fibre, Los Angeles, (l to r) LAWSON TURCOTTE, Pres., Puget Sound Pulp & Timber Co., who presented award, A. F. KNAGGS, Mgr., and C. G. GUINN, Pres. & Safety Supervisor.

launch a discussion or cite an example which could utilize a 10-minute part of the meeting.

John P. Burke, Pres.-Secy., PS&PMW, Fort Edward, N.Y., 39 years in this position, said as far as safety is concerned, it is more important to be reminded than it is to be informed. He said he knows of no industry with better chances for advancement for young people or where labor and management have better relations.

Urging a "% of perfection" instead of the conventional frequency rate approach, Mr. Dunning stated the Pacific Coast mills' record in this manner: "The West Coast industry can report operations 93% safe in 1955 as compared to only 67% in 1945.

"But," he said, "our gains have not been substantial enough. We need a

'new look' at safety. If we talk about safety in terms of percentages, we can editorialize on the percent of perfection rather than using the negative frequency rates."

HOW SCOTT REDUCED ACCIDENTS—He told how Scott had used the full resources of its sales and public relations staffs in promoting and selling safety to its employees. He said Scott had reduced its frequency to 3.3, less than half the Pacific Coast average, from a rate of twice the industry average in 1941. He strongly advised using all the public relations resources a company could muster to sell safety.

The management association's president, Robert S. Wertheimer, vice pres. and gen. mgr., Longview Fibre

1955 Coast Award Winners

To commemorate the 10th anniversary of the Pacific Coast conferences, a special award was presented Crown Zellerbach Corp., Camas, for the lowest cumulative frequency for the 10-year period 1946 to 1955 inclusive. Its 10 year rate was 6.76 injuries per million man hours worked.

Three tied for the All-Coast 1955 award, with perfect records.

All-Coast Award	Man-hours	Disabling injuries	Frequency rate
Crown Zellerbach Corp., Los Angeles, Calif.	580,642	0	0
Rayonier Inc., Olympic Div., Shelton, Wash.	290,283	0	0
Longview Fibre Co., Seattle	104,483	0	0

State Award Winners

California: Crown Zellerbach Corp., Los Angeles	580,642	0	0
Oregon: Weyerhaeuser Thr. Co., Springfield	658,052	2	3.04
Washington: Rayonier Inc., Olympic Div., Shelton	290,283	0	0

5-Yr. Cumulative Injury

Frequency, 1951-55			
Rayonier, Olympic Div., Shelton	1,349,739	1	0.74

Frequency Progress for Years 1954 and 1955 By Size of Mill

	Year 1954			Year 1955		
	Man-hours	Disabling injuries	Freq. rate	Man-hours	Disabling injuries	Freq. rate
Rayonier, Olympic Div., Shelton, Wash. (for mills under 500,000 man-hours)	281,313	0	0	290,283	0	0
Crown Zellerbach Corp., Los Angeles (for mills between 500,000 and 1,000,000 man-hours)	565,119	7	12.39	580,642	0	0
Rayonier, Port Angeles, Wash., (for mills between 1,000,000 and 1,500,000 man-hours)	1,233,970	9	7.35	1,075,382	3	2.79
Crown Zellerbach Port Townsend, Wash. (for mills with over 1,500,000 man-hours)	1,517,230	14	9.23	1,578,286	3	1.90

Crown Zellerbach Corp., Los Angeles, ranked No. 1 with the best frequency progress report of all mills, based on most recent five years as compared to the year prior to start of Conference program (1945). Their percentage change from 1945 to 1955 was 100%, from a frequency rate of 16.94 to 0. The same mill also won the Otto R. Hartwig award for lowest frequency rate for year.

Crown Zellerbach Corp., Port Townsend, Wash., won the Governor's Safety Trophy for the State of Washington, with the lowest yearly frequency rate of any mill in state (see above).



CO-CHAIRMEN the first day were (l to r) JOHN SHERMAN, JOHN TEEVIN (both for labor) and BOB GILMORE, Rayonier Safety Supervisor. Mr. Teevin for labor, presented progress report (prepared by Oscar Robertson). Hard hats signify membership on planning committee.



SECOND DAY'S Co-Chairmen were AL BROWN (left), for unions, and NICK CHICHERIN (right), Weyerhaeuser, Springfield, both representing Oregon.



TWO VETERANS co-chairmanned 3rd day's program: IVOR ISAACSON, PS&PMW (left), and GENE RIDINGS (right), of Fibreboard, both from Los Angeles.



LUNCHEON TOASTMASTER RAY BAKER (r), Mgr., Weyerhaeuser Pulp Div., introduced Guest Speaker R. A. "DUTCH" DERR, Manager, Fairbanks, Alaska, Chamber of Commerce, who presented inspirational-type speech.

Co., compared the safety of industrial work with American home life. "Of all human accidents, one of every 57 occurs in the home. Only one out of every 77 accidents occurs in a Pacific Coast mill. It is safer today to work in one of these plants than it is to stay at home."

Ned Dearborn, pres., National Safety Council, Chicago, was another program speaker.

A specialist in industrial accidents, particularly hand surgery, Dr. Carl E. Nemethi of Los Angeles, urged greater cooperation between medicine, management, labor and the injured employees.

COMMENTS BY LABOR CHIEF—

Paul L. Phillips, pres., IBPM, Albany, N.Y., praised the safety efforts of the conference and told how plants in other parts of the country are utilizing the experience of the Pacific coast mills and their annual conference. Mr. Phillips said there are some mills which oppose intrusion by labor into plant safety programs.

Regarding deafness, he stated that some Southern paper mill workers have asked to have this condition be classified as a compensatory injury. He recognized the efforts being made by



BEST 10-YEAR safety record award was presented by S. J. ROBINSON (middle), Vice Pres. and Gen. Mgr., Publishers' Paper, to CZ Camas' G. H. GALLAWAY, Res. Mgr. (left) and JACK F. ROBERTSON (right), Safety Supervisor.



GOVERNOR'S SAFETY TROPHY was presented by VERN BATES (left) Director, Wash. Dept. of Labor & Industries, acted on behalf of Arthur B. Langlie, to LEO ZIEL (top right), Res. Mgr., CZ, Port Townsend, for safest mill in the state in 1955. BILLY WELSH (seated), toastmaster in foreground.



AT CANADIAN MEETING. A. C. KENNEDY (left) Ind. rel. mgr., MacMillan & Bloedel, Vancouver, with H. L. HANSEN, Sulfitte and Paper Mill Workers, co-chairmen of sessions. AL E. BROWN (right), Paper Makers, Portland, and E. A. (Mike) PAUL, Ind. rel. mgr., Crown Zellerbach Corp., San Francisco.



industry to solve machine noise problems and hoped that a universal solution would be forthcoming.

Mr. Phillips called it a paradox that workers come from all directions upon discovering an accident but fail to respond with similar energy when seeing a fellow worker commit an unsafe act.

Dr. Arthur Secord, professor of speech, Brooklyn College, said, "When something happens in a mill, it's not because of ignorance but because somebody said something and somebody heard it a different way." He stressed these ways to communicate ideas: (1) Speak the other fellow's language. (2) Try to make only one point in any one attempt at communication. (3) A point must be dramatized by an example. (4) Master the intelligent use of praise. (5) Develop ability to use courtesy and tact.

Delegates in general seemed to feel the next large area for progress will be to reach individuals and to appeal to them, since much of the progress to date has been in the manner of mechanical progress.

British Columbia Safety Record is Criticized

R. M. Cooper, vice president of Powell River Co., pulled no punches when he told the Sixth Annual Labor Management Safety Conference in Vancouver, B.C., that the pulp and paper industry in British Columbia slipped badly in safety last year.

"In the nine mills operating under the standard labor contract, our frequency rate jumped from 10.38 to 16.22, an increase of over 50%, while severity decreased from 2372 to 1721—29%," he said. "Only one mill, Ocean Falls, showed an improvement in frequency rate and only Powell River in the severity rate."

British Columbia's performance was below that of the Pacific states and Mr. Cooper said the situation presented the industry with a challenge. More than 200 attended the conference.

Paul L. Phillips, president of the Paper Makers, and John P. Burke, president of the Pulp, Sulfitte and Paper Mill Workers were speakers. Co-chairmen were H. L. Hansen, Pulp, Sulfitte and Paper Mill Workers, and A. C. Kennedy, MacMillan & Bloedel.

Top safety team award of the year was presented to Harmac pulp division of MacMillan & Bloedel. The Ocean Falls mill of Crown Zellerbach Canada was awarded the CPPA trophy for the safest mill in British Columbia in 1955. Shield for the converter plant with the best safety record for the year was won by St. Regis Paper Co.

The best safety slogan—"Safety Rules are Your Safest Tools"—was written by Len Whalen, staff artist at Ocean Falls, who won a similar prize last year. Over 360 slogans were submitted.

R. A. Frost, training administrator, Weyerhaeuser Timber Co., told the conference that over 90% of accidents were caused by man failure, and that was where the emphasis should be in any safety program.

I.P. Co. Will Invest \$116,000,000 in Mills, etc.

International Paper Co. has invested \$400,000,000 since the end of World War II in added plant capacities, woodlands and improvements. An additional \$116,000,000 investment will be made in construction or improvements in progress or authorized to start in 1956, and for additional woodlands.



Impco Headlines

ARTHUR L. WHITESIDE (left), has been elected Vice Pres.—Agitation, Improved Machinery, Inc. He has been Mgr. of that division, is a graduate of Ohio State U., a member of TAPPI and of American P&P Mill Supts. Assn. JOSEPH K. PERKINS (right), is new Sales Mgr. of Pulp Machinery for Impco. He has been with company since 1946, is a chem. graduate of Ala Polytechnic Inst. and a member of American P&P Mill Supts. Assn.



Ebasco Services Appointments

E. A. MAHANNAH (left) and S. H. GRIMNES (right) are new Asst. Proj. Engrs. assigned to the Pulp and Paper Mill Div., Ebasco Services, Inc. Mr. Mahannah began his pulp and paper career in 1919 with International Paper. Until 1945 he supervised design and construction of IP's Canadian and northern U. S. mills. He went with Dexter Sulphite Pulp & Paper Co. as Gen. Engr. and in 1954 joined St. Lawrence Paper Corp. as Plant Engr. Mr. Grimnes, a graduate of Technical U. of Trondheim, Norway, joined Research Div., General Motors, in 1927. In 1937 he went with Munising Paper Co. as Plant Engr. and since 1947 has been Chief Engr. for Pulp and Paper Div., Diamond Match Co.



New Sales Assignments

CHARLES W. PAGE (left) is now assigned to Washington and Oregon, and ROBERT D. GREGORY, JR. to parts of Indiana, Ohio and western New York, handling sales for Albany Felt Co.

PICTURE NEWS of the INDUSTRY



Manager for American Potash; Canadian Exec for Hercules

ED KOLB (left) is Eastern Sales Mgr., Heavy Chemicals, American Potash & Chemical Corp., based in New York City, under the new realignment of sales for this producer of salt cake and chemicals for pulp and paper. He is the opposite number to WILLIAM M. CLINES, promoted to Western Sales Mgr., Los Angeles, and both report to W. J. F. (BUCK) FRANCIS, Vice Pres. i/c Sales, also based in Los Angeles. Their pictures: Mr. Francis, p. 91, Feb. issue; Mr. Clines, p. 87, Mar. issue.

DANIEL D. CAMERON (right) is new Sales Mgr., Paper Makers Chemical Dept., Hercules Powder Co. (Canada) Ltd., announces T. G. BATCHELOR, Mgr. Dir. in Canada. Mr. Cameron succeeds RAYMOND M. BISHOP, who has resigned to join Anglo-Canadian Paper Mills Ltd. Mr. Cameron has been district manager at Kalamazoo, Mich., for Hercules. He joined Hercules in 1939, after graduation from Purdue.



They Serve This Industry

BRIAN L. SHERA (left) has been promoted to Asst. Sales Mgr., Pennsylvania Salt Mfg. Co. of Washington, according to FRED C. SHANAMAN, Pres. Mr. SHERA, 20 years with Pennsalt, is a chemical engineering grad of U. of Washington.

N. D. "DAVE" CUNNINGHAM (right) has joined Lockport Felt Co. as Technical Service Rep. He has a background in roofing, was Plant Mgr. and Supt. at Philip Carey Co., Supt. of Central Fibre Products in Illinois, and Supervisor of Globe Roofing Products of Indiana. He once worked for Dresden Paper Mills. He will headquarter in Newfane, N.Y.



In New Posts in South

RUFUS C. BARKLEY, JR., (left) is Vice Pres. of Cameron & Barkley Co., Charleston, S. C. Rufus, Jr., is the fourth generation of his family to actively engage in company business. He continues to handle sales, advertising and administration.

JOHN FRANKLIN BETHEA, JR., (right) has been appointed Sales Engineer for Soderhamn Machine Mfg. Co., Talladega, Ala. He is a graduate of U. of Mississippi, formerly represented Wilco Machine Works, of Memphis, Tenn.



New Bolton-Emerson Managers

JOSEPH M. STEINER (left), of 3110 No. Oneida St., Appleton, Wis., has been appointed Midwestern Regional Mgr. for Emerson Mfg. Division of John W. Bolton & Sons, Inc., and OSCAR E. LARSON (right), of 166 Lake Ave., Piedmont, Calif., is Western Regional Mgr. for the same company. Mr. Steiner has been in Appleton for Bolton since 1949, previously was with Central Fibre Products, Iowa. Mr. Larson, a Wisconsin U. grad, has likewise been on the West Coast for years.



In New Spots at Longfibre

(l to r) WILLIAM W. CLARKE, Paper Mill Supt. since 1948, has been named Gen. Supt. in charge of Pulp and Paper Mfg. at Longview Fibre Co., Longview, Wash. This is a new position. He joined Longfibre in 1933 shortly after getting C.E. degree at U. of Washington, Seattle, was Chairman of Coast Supts. in 1954. RUSSELL M. GRAFF, an Oregon State College chem. engr. who has been Asst. Pulp Mill Supt. here since 1948, succeeds Mr. Clarke as Paper Mill Supt. HAROLD A. WOMACK was promoted to First Asst. Supt.



PAPER WEEK HAS "PAPER WEEK"—PULP & PAPER suggested in February issue that "Paper Week" for the public should be proclaimed by Mayors, later become national. P&P's idea was accepted by Mayor Robert Wagner of New York, who read the editorial and proclaimed Paper Week for all N.Y.C. Photo at left shows Commissioner Richard Patterson, Dept. of Commerce and Public Events, reading editorial in P&P as DON LESLIE, retiring APPA President, looks on. At right, Mr. Leslie accepts Mayor's Proclamation of Paper Week from Commissioner Patterson in front of Paper Week Exhibit of American Cyanamid at the Commodore. TED TINKER, APPA Executive Secretary (l) and JOHN WALSH, Mgr. of American Cyanamid's Paper Chemicals Dept., watch historic event.

Industry Sets Sights for Record Year

Official advisory report places increased demand for all 1956 at 6%—chemical additives agreement is reached

• An official advisory report to top management in closed sessions of Paper Week puts increased pulp and paper demand for the year 1956 at 6%. This is the latest and most widely accepted target for the industry. It sparked much of the top management discussions during the biggest Paper Week in the industry's history.

As usual, attendance at Paper Week is a nebulous figure to try to ascertain. There were probably 3,500 or more in town—management, sales, technical and customers and suppliers. Here are some clues:

TAPPI registration, 2635; Sales Association luncheon, 1895; American Pulpwood Association registration, 247; APPA annual dinner, 810.

There is some over-lapping here, particularly of APPA and Sales group figures.

TOP TOPICS—TRR certainly, manpower, water resources, world market potentials for pulp and paper, the new wet oxidation processes, noise

SEE PULPWOOD SECTION for one of most important stories of Paper Week—"Debate" over Forest Service's timber forecast and how it should be revised



THE BEST OF LUCK says DON LESLIE, retiring APPA President and President of Hammermill Paper Co., as he greets DAVID LUKE, new APPA President and President of West Virginia Pulp & Paper Co.

abatement, and—because we're dealing with humans—rumors.

The industry's growing stature was attested in several instances: APPA held its first press conference prior to the convention; Mayor Robert Wagner proclaimed Paper Week in New York City; mills which formerly sent 3 to 5 men to the meetings, sent 10

to 12; and there were many financial men present.

INTERESTING FACT—Pulp and paper is one of only two major industries which regularly publishes national production figures in relation to capacities. The other is steel. This was told by retiring APPA President

Don Leslie at the annual Association of Pulp Consumers luncheon. The operations-in-relation-to-capacity data of APPA and National Paperboard Association are valuable tools in future industry planning.

SAID IN PEACOCK ALLEY—A white-haired veteran of over 30 Paper Weeks, in a huddle with a few young and old associates in the Waldorf's Peacock Alley, was heard to say:

"This will be the greatest business year in the lives of everyone here—young or old. I've never before witnessed such a Paper Week. Companies that used to send two or three men, have sent eight or ten this year. There are more and bigger dinner parties, theater parties and entertaining than will be seen again."

He got himself an argument, however. One of his friends said: "The general trend line for paper will still go up. The American businessman has got to become accustomed to new records every few years, if not in successive years. With a renewable resource, wood, the paper industry has a brighter future than many other industries."

REACTIONS TO SOME REPORTS—

The materials sessions this year, staged by APPA, brought some grumblings from pulp and paper industry men because of forecasts of higher prices for some chemicals.

Several officials at Paper Week were completely sold on a rising export market for pulp, and paper and board. A few sharp listeners noted wryly that some of these leaders just two or three years ago were throwing up hands in horror because of new pulp mills being built. They even urged pulp companies not to build, asserting over-capacities would ruin the industry. Now the same individuals see world markets as an assured growing outlet for North American pulp products.

CHEMICAL ADDITIVES AGREEMENT—As exclusively reported in PULP & PAPER before Paper Week (and confirmed by a feature article in the N.Y. Times on the opening day of the convention), the threat of hobbling national legislation that restricted use of chemical additives was a major behind-the-scenes problem at the annual gathering.

As a sequel, PULP & PAPER has authoritatively learned that the paper, paperboard and chemical industries (manufacturers of additives) reached an agreement just on the eve of Paper Week.

But they couldn't get the food industry to join them. This would have given them a much stronger case to

present to Congress. As one paper man said: "The food industry is not all for improved containers and packages. Some of them seem to want to keep selling bread that will stay fresh only two days, instead of a week."

However, APPA and NPA leaders at Paper Week were confident that the U. S. Public Health Dept. will accept their now unanimous views.

After many meetings, debating most complicated problems, the industry's stand is that if there must be such legislation, the burden of proof concerning alleged harmful effects of any additives must rest with the government.

TARIFF ISSUE UP TO DATE—E. W. Tinker, executive secretary of APPA, told the Sulphite Paper Mfrs. Assn. that the industry leadership is striving to keep international trade actions on a basis that will:

(1) Keep every grade of paper made in America in a competitive position. (2) Keep all agreements truly reciprocal—with reduction of tariffs in agreeing nations at the same point.

However, he contended that discussions in the world agency, GATT, and reports from international sources indicate some countries have no intention of making agreements reciprocal.

HIGHER FREIGHT RATE ACCEPTED—Questioning many paper industry leaders at Paper Week, PULP & PAPER found very few who oppose the 6% increase in rr freight rates. A few were bitter about it, argued against it, but the great majority felt opposition was futile and that the railroads' cause was just, based on their costs.

WHITHER PROFITS?—At SAPI's big annual luncheon, Ted Tinker of APPA compared the industry's profits based on net worth in 1947 of 19.7% to only 9.7% in 1954. Also profits based on net sales in 1947 of 10.3% compared with 5.6% in 1954. These are not APPA figures, but the Treasury Department's.

TWO GRADES ARE SHORT—Actually the industry is expanding at a normal rate in all except two grades. The demand and growth of newsprint and of containerboard are abnormal. By 1958, there will be 500,000 more tons capacity for newsprint than now. By 1958, there will be 1,000,000 more tons capacity for paperboard.

"HAVE-NOTS" WILL BE "HAVES"—Back from an around-world-tour, Harold Zellerbach, exec. vice pres. of Crown Z, told friends at Paper Week

QUOTABLE QUOTES



GUSTY PAINE, (left) Vice Pres., N.Y. & Penn. Co., "Public relations is living right so that other people talk about you." **GEORGE OLMSTED**, (right) Pres., S. D. Warren Co., "Today we're riding the white horse—and insurance companies, investment trusts, trust companies and brokers are scrambling to acquire the securities of many of you in this room."



"WELL DONE AND BEST OF LUCK!" says **ALLAN HYER**, (left) Vice Pres., Black-Clawson, as he shakes hand of **JACK O'CONNELL**, who announced his retirement after 65 years in the industry. "I still love the industry," says Mr. O'Connell.



ALAN ABRAMS, Director, Marathon Corp., "Give your research director a place high in the organization, where he will have opportunity to make use of his abilities."



DAVID L. LUKE, JR., member of a great papermaking family and President of West Virginia Pulp & Paper Co., takes on presidency of American Paper & Pulp Association.

From a Papermaking Family

David L. Luke, Jr., president of West Virginia Pulp & Paper Co. and newly elected president of American Paper & Pulp Association, can trace papermaking in the Luke family back to a great-grandfather in Scotland in 1826.

But it was his grandfather, William Luke, who with two sons, David and John, founded the Luke papermaking enterprise in 1888 as Piedmont Pulp & Paper Co. At what is now Luke, Md., they built a sulfite mill, which company tradition says was one of the first commercially successful sulfite mills in the U.S.

Beginning operations in 1889, this mill had 60 employees and an annual production of 9,000 tons. Today West Virginia operates 6 integrated pulp mills which produced 852,000 tons in 1955. This figure is already obsolete for, according to a late report to PULP & PAPER, the company is presently producing at an annual rate of of well over 900,000 tons. The parent company has more than 8,000 employees.

In addition, West Virginia operates 13 corrugated box plants in the U. S. through its subsidiary, Hinde & Dauch Paper Co.; has a majority stock interest in H&D Paper Co. of Canada, Ltd. operating 6 corrugated box plants, 1 folding carton plant and 2 paperboard mills; and a wholly-owned subsidiary, Rigesa, S.A. operates 1 pulp and paperboard mill and 1 box plant in Brazil.

David Luke, Jr., joined West Virginia in 1922 after graduating from Sheffield Scientific School at Yale U. Starting at the Tyrone, Pa., plant he has successively held posts of technical assistant, then assistant to the president, vice president, and in 1945 he was elected president.

Carrying on the family tradition, two sons, David III and John, bring the Luke papermaking enterprise in the U.S. to the fourth generation. David Luke III is

financial vice president and a director. He graduated from Yale after serving as a Marine Corps torpedo plane pilot in the Pacific. Before joining West Virginia, he was with Arthur Andersen & Co. and American Research and Development Corp. He is responsible for liaison with the company's subsidiaries, Hinde & Dauch and Rigesa, S.A. and also coordinates research and planning and directs broad financial studies.

John A. Luke, manager of the Luke mill, which now produces upwards of 400 tons daily, has a 1949 B.A. from Yale and began his paper industry career at the Charleston mill as acting employment manager. He also served as personnel manager and then assistant manager, responsible for overall direction of economic research and business studies, along with personnel administration, office management and other functions.

Head Men for 1956

These men were elected association leaders of the industry during Paper Week:

American Paper & Pulp,

David L. Luke, Jr., West Va. P&P Co.

Pulp Consumers,

Samuel R. Sutphin, Beveridge Paper Co.

Pulp Producers,

James L. Ritchie

Salesmen,

Eugene O. Hanson, Brown Co.

Stream Improvement,

George E. Dyke, Robert Gair Co.

TAPPI,

Karl O. Elderkin, Bowaters

Sulphite Paper Mfrs.,

Russell C. Flom, Marathon Corp.

Writing Paper Mfrs.,

George E. O'Connor, Mohawk Paper Mills, Inc.

Groundwood Paper,

Jack Cryan, Fraser Paper, Ltd.

Newsprint Bureau,

A. G. Wakeman, Coosa River Newsprint

Kraft Paper,

Reginald L. Vayo, St. Regis

Paper Napkin,

R. W. Bertram, Marathon Corp.

Glassine & Greaseproof,

Wilfred A. Wylde, Deerfield Glassine Co.

Tissue,

Wayne E. Brown, Crown Zellerbach Corp.

Blotting Paper,

J. J. Hallowell, Wrenn Paper Co.

Coated & Processed Paper,

Louis C. Krauthoff, H. D. Catty Corp.

that his observations are that the "have-nots" around the globe will soon be the "haves," too. Many backward countries of the past will be demanding more and more paper.

"CAN'T GET ALONG WITH SOVIETS"—A one-time paper industry advertising and sales representatives of Strathmore Paper Co. came back to Paper Week to speak at Assn. of Pulp Consumers luncheon as a "big name" in foreign experting and public affairs.

He is Gen. Frank R. Hawley, who retired as a brigadier general, and is now vice chancellor of New York University, one of the biggest college administrative jobs in the world.

On the basis of his wartime experience as Military Governor of Berlin during the famed "air lift" emergency, and many travels around the world since then, Gen. Hawley laid it on the line to the Consumers and their guests:

"We are fighting the 'Smiling War' with communism. We can't get along with any Soviet governments, and so we had better quit kidding ourselves. Zhukov has said he will attack our cities, bomb our women and children. We have been letting crime pay too often, with just a slap on the wrist."

He said, "We can't count on West Germany, France or any nations north of the Pyrenees, but we can count on Spain. The people there are behind the government. Our 16 bases in Spain are safe. Our fleet near Nice, France, wants to move down to Spain."

He said France is "strong, not a third rate power" and the "richest country in Europe in natural resources." But its "revolving door" cabinets make foreign policy uncertain.

TOURING CONSUMERS REUNITE

—Nearly all members of the Association of Pulp Consumers, Inc., who made the history-making tour of Pacific Coast pulp mills, in Washington, British Columbia and finally, the site of the new St. Regis mill in Hinton, Alta., last fall, were present for a special reunion during Paper Week in New York.

The ladies, wives and relatives, enjoyed a reunion luncheon at Finland House, Feb. 21, and that same evening joined with the men in a cocktail party. Ed Olmsted, vice pres., Eaton-Dykeman, Joe Rohrbauch, purchasing agent, P. H. Glatfelter Co., Roy Sargent, purchasing agent, C. H. Dexter & Sons, and Austin Schillinger, purchasing agent, Rogers Corp., showed color movies of mills, mountains and other scenes. Ralph Powers, president of Robertson Paper Box Co., pre-



CONVENTION MOMENTS IN PICTURES

GETTING TO KNOW EACH OTHER (left) now that their companies are one are (l to r) R. P. "TOM" PRICE, Vice Pres., Hammermill Paper Co. and RICHARD T. "DICK" TRELFA, Tech. Dir., Watervliet Paper Co. **DUTCH DELEGATES** at Paper Week (center), surround a New Englander. (l to r) A. P. NEEB, head of Technological Development, Van Gelder Zonen Co.; FRED H. FRÖST, Research Director, S. D. Warren Co., and C. J. J. NINCK-

BLOK, Research Director of Van Gelder Zonen, which owns five mills and make 50% of all paper made in Holland. **LEONARD A. PIERCE, JR.** (right), formerly with St. Regis Paper Co. for 15 years, is now Asst. to Pres. Eugene H. Clapp of Penobscot Chemical Fibre Co. He is a specialist in manufacturing. Mr. and Mrs. Pierce and daughter, Susan, 4, have moved into a home at Wayland, 16 miles from Boston. Mr. Pierce's hobby is horses.

sented a special exhibit. And in another corner, Dave Knowlton, president of Knowlton Bros. Co., showed his 3-dimension color slides.

The reunion, probable precursor of more annual "get-togethers," wound up with "the gang" singing their "official" song, composed to the tune of "Old McDonald Had a Farm" by Bunny and Jack Tropp, Schweitzer Paper Co., while the party was at Jasper National Park.

Here are first and last verses:

"Pulp Consumers took a trip—
e i e i o h

"To see the mills we went by
ship—e i e i o h

"With a yacht yacht here—
a sip sip there

"Here a train—there a bus—
everyone transported us

"Pulp Consumers took a trip—
e i e i o h.

"When home we trek our separate ways—e i e i o h

"We'll remember this through all
our days—e i e i o h

"With a yacht yacht here—a sip
sip there

"Here a train—there a bus—
everyone transported us

"Pulp Consumers took a trip—
e i e i o h."

Lane Taylor, past president of the Consumers, and of W. C. Hamilton & Sons, who headed the tour, and Reed Porter, executive secretary of the association, were given a rousing cheer for arranging the reunion parties.

CHEMICALS PICTURE—Predicted high rates of operation for 1956 in the pulp and paper industry will be translated into heavy demand for chlorine, caustic soda and soda ash, predicted John O. Logan, general

manager of industrial chemicals division, Olin Mathieson Chemical Corp. at the open session of the APPA Materials Committee.

The soda ash industry will be confronted in the next 2 to 3 years, he said, with basic decisions on substantial expansion to meet continuing demand and these decisions will not be easy.

Departing from previously published texts, Mr. Logan said that generally, organic chemicals are available and in ample supply.

PRICE TREND UP—However, before his audience could relax after that statement, he said that with continuing increases in labor rates, higher equipment and construction costs, it is inevitable that price trends on chlorine, caustic soda and soda ash will continue upward with greater emphasis probably in the pricing of soda ash.

Since 1939, caustic soda production has increased from 1,000 tons to 3,900 tons in 1955, with a predicted jump to 5,000 tons in 1965. In that same span, chlorine has spurted from 500 tons to 3,300 and 4,800; while soda ash has risen from 2,100 tons to 5,000 and 6,700 predicted in 1965.

HOW FAR UP—After listening to Alfred G. Blake, executive vice president, Minerals and Chemicals Corp. of America, talk on the supply outlook for clays and fillers and Mr. Logan's discussion on chemicals, one questioner asked: "We have made much progress in the industry and the curve is going up and up. We are going to have millions of tons more of paper, clay, chlorine, etc. Doesn't anybody stop and think that maybe that tremendous progress can't continue—that there may be a lull in

consumption—that per capita consumption has gone up to where we should stop and take a halt?"

Mr. Blake replied that "we have gone back to 1900 in our studies and you can almost put a ruler on 1900 and 1955 as far as progress is concerned." It is the obligation of the industry to keep up with the pace, he explained, adding that on the other hand you can't go haywire because profits are based on 24-hr. day appetites and always working. You have to keep ahead but not too far ahead, he claimed.

At the close of the Materials session, Allan Hyer, vice president, Black-Clawson Co., paid informal tribute to Jack O'Connell, who announced his retirement March 1st after 65 years in the pulp and paper industry.

FORESEES GREATER PULP EXPORTS—A lack of understanding of what is happening in world pulp markets is partly responsible for conflicting statements on the outlook for market chemical woodpulp, reported Keve Larson, sales manager of pulp division, Weyerhaeuser Timber Co., at the annual meeting of the U.S. Pulp Producers Assn., Inc.

Some Scandinavian observers, stated Mr. Larson, have been trying to create the impression in European markets that North America's overseas exports must inevitably decline because of imminent increases in requirements within North America.

Commenting on a tendency in the U.S. to gear vital conclusions to "audience reaction" instead of facts, the pulp market expert stated, "No commodity that moves in world trade is better documented statistically than market chemical woodpulp," he emphasized, "there is no valid ex-

cuse for generalizations unsupported by fact. Let the record speak."

GROWTH CENTER IS NA—Citing statistics, Mr. Larson showed that since 1937 the entire growth in world market chemical woodpulp has been centered in North America.

Another point he brought out was that when integrated capacity becomes idle, these mills usually have no facilities for drying and packaging market pulp and that some believe that sales to non-integrated operations would only delay their own recovery.

Because of the trend toward integration, said Mr. Larson, the rate of increase of North American requirements for paper grades of market pulp is almost certain to be slow. On the other hand, he said, market dissolving pulp requirements should continue to grow.

For the foreseeable future, predicted Mr. Larson, the prospective growth in North American market chemical pulp requirements will not, by itself justify a continuance of the previous rate of expansion. Therefore, he continued, most of the justification for continued expansion must stem from further development of export business.

LATIN AMERICAN OPPORTUNITY—"Latin America is the most vital area to American business," reported Ralph S. Stillman, president of Grace National Bank, to the APPA Export meeting. "It has an astonishing physical growth and rising standard of living," he said.

The stakes in this market are high and are worth fighting for, he said, citing a report by the UN Economic Commission for Latin America which estimated that per capita paper and paper products demand should rise from 19.4 lbs. to 33 lbs. by 1965, an increase about 70%. Combining this increase with a 34% population increase, Mr. Stillman estimated a 127% increase in total paper demand.

RESEARCH IS A BUSINESS—Speaking on a subject obviously close to his heart, Allen Abrams, director, Marathon Corp., told the Open Industry meeting that research is a business, an undertaking of creating new and better things. Conducted along sound lines, we think this business will pay off and handsomely, he predicted.

STATUS OF COMMUNITY RELATIONS—At the Open Industry meeting George Olmsted, president, S. D. Warren Co., said community relations is a job which top executives can't delegate. "You can't just pass this over to a personnel department



A TIME FOR FRIENDS TO GET TOGETHER—(l to r standing) J. C. "PETE" BARTHEL, Tech. Dir., Paper Chemicals Dept., American Cyanamid; F. A. "BUD" STROVINK, New England Regional Mgr.; CHET LANDES, Tech. Service Div.; A. M. "DOZE" CORNELL, Pacific Coast Regional Mgr.; all American Cy; RALPH KUMLER, Exec. Secy., Waste Paper Utilization Council and formerly Cyanamid T. D.; and PHIL NUSSBAUMER, Pollock Paper Corp. Sitting (l to r) are JOHN CALKINS, Asst. to Pres., Foster D. Snell, Inc., Mrs. Calkins and JIM JOHNSON, Pollock.

and then wash your hands of it. If you do, your sincerity will be questioned and your efforts will have a hollow and phony ring to it," he stated.

A DEFINITION—"Community relations in public relations on a community level," said A. G. "Gusty" Paine, vice president, New York & Pennsylvania Co., Inc. "Public relations is living right and talking about it. Better still, it is living right so that other people talk about you, and when they talk they say nice things.

LESLIE BIDS FAREWELL—It was obvious to the packed Starlight Roof audience that retiring APPA president Don Leslie had come close to his friends in the industry and with

reluctance was bidding them farewell as president.

Summing up benefits of association endeavor, Mr. Leslie mentioned the whole revision of freight rates in 1955 which takes pulp and paper products out of regular classifications and applies commodity rates, and also that the import committee, by catching 2 different classifications, saved the industry one to two million dollars in one year.

Surveying his audience, Mr. Leslie said that the future ahead presents a "beautiful picture,"—billions of tons of paper. But he warned, "Let's not forget that the path of business and life is not a constant road, let's remember that weaknesses can pile up along the line. Let's remember 1949," he urged.

Opinions and Comments from the Industry

• What kind of a convention was it? And what, in your opinion, is the most significant development to come out of Paper Week 1956. PULP & PAPER asked these questions of several prominent industry men and here are some answers:

CONFERENCES STIMULATING—"This was a good Tappi meeting. The dissolving pulp session was very interesting and naturally, I found the plastics session very good. Unfortunately, the dissolving pulp session conflicted with the sessions on manpower and I found it impossible to divide myself.

"The corridor and lobby conferences were especially stimulating, particularly since it brought me together again with such far away friends as Dr. Joe McCarthy of Seattle, Wash. and Dr. Borje Steenberg, professor from the Royal Institute of

Technology, Stockholm, Sweden.

"I came away feeling well satisfied."—E. C. Jahn, Associate Dean, State U. of New York, College of Forestry.

COMMENTS AND CRITICISMS—"TAPPI is suffering from size, as are many other technical organizations. When I became a member in 1919 there were 475 members vs. 6000 now, and the "circus" had one ring, with a clear picture of the whole. Now, with many rings, the familiar "clotting" of specialties, as does free pulp, is taking place, producing greater density in spots and a weakening of the whole fabric.

"There should be more papers, such as those on water supply, covering raw materials, fuel, labor and transportation. . . . The high points of really new developments should be brought out, with the elementary

physical and chemical reasons therefore.

"Why do we have so few trained in physics in the industry vs. many trained in chemistry? In the interval between pulp and paper finishing, the problems are mostly physical.

"We need to get into the general audiences more of the active and potential managers, who are now said to need only 15% of technical knowledge, but 85% of personnel handling ability. Future managers need to know a great deal about materials they are to manage and not be wholly at the mercy of their specialists.

"Simultaneous sessions should be minimized. General sessions should omit detail tabulations and multiple curves. These belong in yearly division meetings, such as Pulp Manufacture, Engineering, Converting, etc. Improve the usage of projectors, lights, and amplifiers.

"The facilities for registration and meeting parallel workers are highly effective and this is a strong point in a generally very satisfactory gathering."—George R. Wadleigh, Consulting Engineer, New York City.

CORROSION HIGHLIGHTS—"Reports at the annual TAPPI meeting indicate that corrosion continues to be a major headache in pulp and paper. Kraft digester corrosion-erosion is still an important factor for the corrosion committee of TAPPI to consider, and they sponsored a paper on the subject entitled 'Digester Repair to Abate Corrosion.' However, digester corrosion is now only one of their many problems.

"The sulfite industry still has failures in liquor manufacture, heating, and digesters. Neutral sulfite is corrosive to carbon steel digesters. Hypochlorite and particularly, chlorine dioxide, in bleaching operations raise problems in choosing suitable materials of construction. Pumps, valves, stock lines and shafts fail not only from corrosion but also due to erosion, fatigue, and stresses. Buildings and building equipment are consumed by rust. The answer is one of choosing the proper or best materials or protection for the particular application.

"Some failures reported can be charged to improper selection of materials for the particular service. Many more can be traced directly to improper methods of design, fabrication, welding, and annealing. Many can be anticipated and prevented by taking advantage of present knowledge.

"The use of stainless steel overlay for repair of kraft digesters continues to expand. Five large digesters are now in service with a complete stain-

less overlay in place. Other field installations are being made. This type of field repair still looks feasible and worthwhile for increasing service life of carbon steel digesters.

"All discussions indicate the corrosion engineer has a wide field in which to operate and reduce costs in the pulp and paper industry. Corrosion is one of the mostly costly industry problems."—Edward W. Hopper, Consulting Engineer, J. P. Pritchard & Co., Pittsburgh.

A CANADIAN OBSERVER—"The symposium on wet combustion and other new methods for waste disposal illustrates that our industry is diligently seeking ways of becoming a better citizen and is investing heavily toward that end.

"Dr. Irving Krick's talk on weather modification was excellent. It is apparent that during the past 5 years, great strides have been made in weather engineering and that a degree of control in bringing about precipitation, in the suppression of hail and lightning, now seems possible. It

is far from perfect and, obviously, can only be accomplished under the appropriate combination of conditions. Even the weather engineer cannot make rain when there is no moisture in the atmosphere.

"Dr. Krick referred to the improved control which will be made possible when information from man-made satellites is continuously relayed to the earth. He also emphasized the point that taking water out of a cloud over one area does not rob adjacent areas of their due moisture, since a cloud is continuously fed from the ground as it moves over the land.

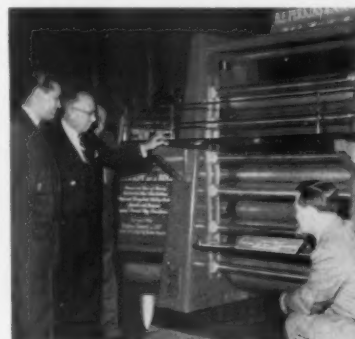
"There is a tremendous amount yet to be done with this new field of weather modification. The hope for success looks much brighter than it did five years ago."—Lincoln R. Thiesmeyer, President, Pulp and Paper Research Institute of Canada.

INDUSTRY SHOULD SELL ITSELF—"The most significant thing, during Paper Week was the emphasis upon attracting technical manpower into the paper industry. Not only was

CONVENTION MOMENTS



GOOD TIME TO GREET FRIENDS. (l to r) GUNNAR HANSSON of Elof Hansson, Inc., JOE MARTINELLI, Monmouth Mill Supply, Inc., and (oh! yes—thought that face was familiar) RALPH DAVID, Advertising Sales Mgr. for P&P.



LUCKY FELLOW. CLIFFORD MANNS, Swance Paper Corp., Ranson, Pa., gets briefing on advantages of new Perkins calendar by the boss man himself—BENJAMIN F. PERKINS, Pres. Slightly behind Mr. Perkins is C. JAMES STEVENS and kneeling is ERIC NORMAN, both of Perkins.



MILL MEN ASKED "WHAT'S NEW" and BEN TROTTER, Southern Sales Rep. for B. F. Perkins, demonstrated new Perkins mullen tester. (l to r) ED VOIGTMAN, Kimberly-Clark, ROBERT KISSELL, Chairman, and Mr. Trotter.



A CONTINENT APART—J. H. "PETE" HEUER, (l) Tech. Dir., Great Northern Paper Co., Millinocket, Maine, congratulates his brother W. J. "JIM" HEUER (center), new West Coast Mgr. for Chemical Linings, Inc. TED DETCHER (r), Pres. of Chemical Linings, says new office at 421 Jones Bldg., Seattle 1, Wash., is to better serve Chemicals customers on the West Coast.

Harry Lewis's symposium important but further discussions at APPA, at executive TAPPI meetings, and at regional meetings point up the necessity and the way for concrete plans to accomplish this.

"It is imperative that the high school boy and girl be encouraged and persuaded to enter scientific fields. They should be 'sold' on the idea that engineers, chemists, physicists and the like are not a bunch of 'queers' but normal individuals who are earning a good living.

"After their proper matriculation in a technical course in college, they should look to the paper industry as being a good outlet for their energies, talents, and efforts—which will be rewarded not only in dollars but also in accomplishment.

"I hope out of this effort at 1956 Paper Week will come a promotional campaign that will attract young people into our industry so that we can continue to grow and get higher on the scale of the important indus-

tries in the U.S.—not fifth, but fourth or even third." Joseph J. Thomas, Associate Research Director, S. D. Warren Co., Cumberland Mills, Me.

Duplessis Control Bill Is Toned Down a Bit

Premier Maurice Duplessis' newsprint control bill in Quebec, with some edges smoothed off, has been passed, and he delayed for a time naming his 4-man newsprint control board provided by the law.

Revisions removed two features that had drawn most criticism: The ban on pulp exports outside the province, and ironclad control over supplies for all newspapers by the board.

Newspapers now have the option of staying outside the board's jurisdiction if they choose to pay the going price, rather than the 1955 price, for their newsprint.

The Montreal Star has announced it will avoid dependence on the board's price control.

Dobrow Starts Forty-first Year with Writing Paper Group

● On a hot day in July 18, 1915 a young student from New York Univ. went to the YMCA employment center. He was referred to two jobs; one with American Newspaper Publishers Association and the other with American Paper & Pulp Association.

Applying first at ANPA, he was told the job was taken. At APPA he was hired. That's how Morris Dobrow came to work for the paper industry.

In January, 1916 Mr. Dobrow switched to the Writing Paper Mfrs. Assn., and still going to school, earned a bachelor of commercial science cum laude and later his master's.

Starting as an assistant to Emmett H. Naylor, first full time executive secretary, Mr. Dobrow became executive secretary

when Mr. Naylor retired in 1938.

New York City-born Mr. Dobrow made the first of his now-famous paper forecasts in 1928. Since then, says Mr. Dobrow, the industry has gained 21,000,000 tons of production. (See "A Look into Paper's Crystal Ball" by Mr. Dobrow in P&P, Dec. 1955.)

In 1914, recounts Mr. Dobrow, writing paper production was 270,000 tons, most of it in cotton rag grades. In 1956, he predicted, some 85 members will produce about 1,500,000 tons, mostly chemical grades. Production this year will probably be the best or second-best to date, he told PULP & PAPER.

What are the most significant impressions of this 40-year veteran of the industry? "It's the tremendous growth of the industry in that interval," he replied.

Mr. Dobrow's office has just completed a detailed study of expansion of plant facilities. The industry is expected to add, in the next two years, some 3,403,000 tons of annual capacity, he said, bringing total capacity up from 30,775,000 tons at the end of 1955 to 34,178,000 tons at the end of 1957.

The industry will expend some \$1,300,000,000 on expansion and installation programs in that interval, he predicted.

"Looking ahead to the next decade—1960's—and taking into account not only the increased population but also increased adult population, we may look forward to an annual per capita consumption increase of as much as 20 lbs. With these assumptions, the industry can anticipate production requirements of close to 2 million tons in 1965," predicted Mr. Dobrow.



BEGINS FORTY-FIRST YEAR with Writing Paper Mfrs. Assn. MORRIS C. DOBROW, Executive Secretary, was saluted during Paper Week for his 40 years in the industry. "The tremendous growth of the industry in the 40-year interval is the most impressive and significant impression I have," Mr. Dobrow told P&P.

PULP & PAPER

PAPER WEEK PERSONALS

BUD JOHNSON, young sales representative for Rhinelander Paper Co., came to his first Paper Week in an official capacity. But it was actually his second Paper Week. First time, as a boy, he was brought along by his parent. His father, the late **STUB JOHNSON**, was the well known Rhinelander production and engineering executive. Bud is a Northwestern graduate, served in the air force, and is married. . . . "**DOC**" **SOUTHON**, former president and now chairman of KVP Co., attended his 40th APPA meeting, believed to be an individual record. . . . **RUFUS Sisson JR.**, retired, former head of Racquette River Paper Co., now merged with Orchard Paper Co., was another old-timer who couldn't keep away. . . . **NEIL E. NASH**, president of Sulphite Paper Mfrs. Assn. Inc., at their luncheon, paid tribute to both Mr. Sisson and Mr. Southon.

WILLIAM G. DEDERT is new manager of the Pulp and Paper Dept., Swenson Evaporator Co., Harvey, Ill., moving up behind **RALPH BERGSTROM**, recently promoted to manager of Swenson. The latter will continue to give major attention to this industry. Mr. Dedert was born in Illinois, graduated from Rose Polytechnic Institute in Indiana, has been with Swenson 10 years.

GENE CLAPP, president of Penobscot Chemical Fibre Co., had that healthy "just back from Hawaii" look. He and Mrs. Clapp, who vacationed last year in the British West Indies, switched to Hawaii this year. . . . The **JOHN CALKINS** (he's assistant to Foster D. Snell) were both at the Convention. By coincidence, Mrs. Calkins, who is a volunteer for the Heart Fund, was scheduled to solicit donations in the lobby of the Commodore Sunday night for "some convention." When she told John, he got a laugh. . . . **BEN TROTTER**, B. F. Perkins & Son, was up from Charlotte to represent Perkins at their exhibit in the Commodore Lobby. He covers from Texas to Delaware.

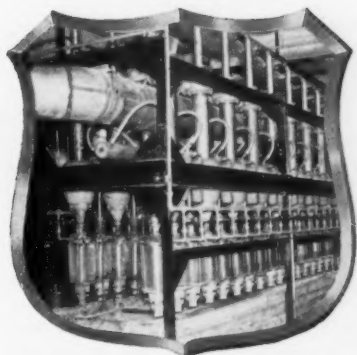
J. H. "PETE" HEUER, technical director of Great Northern Paper Co., says that chemigroundwood process is working out very well at East Millinocket. Pete got together with his brother **JIM HEUER**, who is new sales rep for Chemical Linings on the West Coast. . . . **RALPH KUMLER**, secretary of Waste Paper Utilization Council, took off after the convention for a motor trip to Mexico.

ANNE C. TOOMEY, secretary of the Salesmen's Assn., received the biggest ovation of all on the dais when intro-

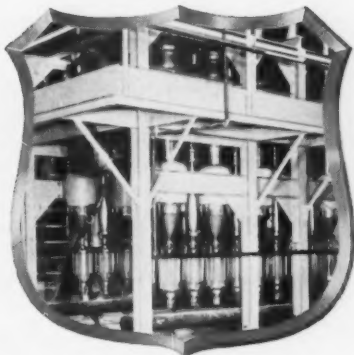
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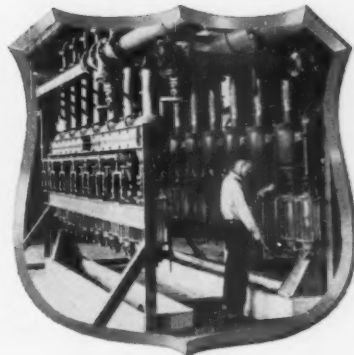
always get their DIRT



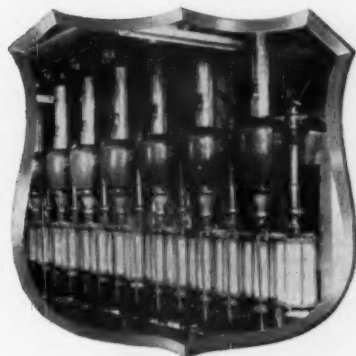
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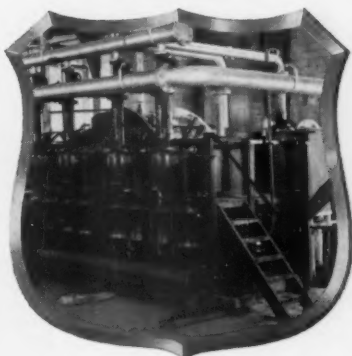
GROUNDWOOD



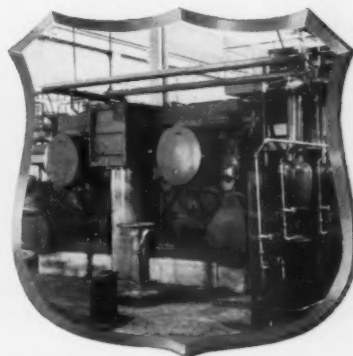
WASTE PAPER



RAG WRITING



DEINK



TAILINGS UNIT FOR BIRD SCREEN

In mill after mill, Dirtecs are on duty removing every bit of sand, grit, rust, metal, glass and other small dirt particles from pulp and paper stocks.

What's more, they deliver clean stock in full volume without mixing any of it with the rejects.

Dirtecs are available in regular or king size and may be equipped with dirt evacuators when desired.

See about enlisting Dirtecs to guard quality in your mill. We'll be glad to make recommendations, layouts and estimates.

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...to be useful to you

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Our aim is to work with *you* to find the *best* answers to *your* problems of felt application and performance.

That starts with intelligent field representation . . . the ability to *understand* your problems . . . then, to interpret them correctly to our research, design and production people.

And our job isn't done until Appleton felts have performed on your machines . . . to your complete satisfaction. This way of doing business, we believe, makes us most useful to you.

FAMILY AFFAIR—Although we take pride in our modern, precision equipment, it takes more than machines to make felts you can depend on. It takes craftsmen, too . . . like the Schwandt brothers, Carleton and Milton, whose combined 37 years of experience and devoted skill pay off for you on the paper machine.



Appleton felts



APPLETON WOOLEN MILLS

a working partner with the paper industry

APPLETON, WISCONSIN

duced during the annual luncheon. . . . ASTI, the opera singing restaurant on 12th St., was the scene of a Paper Week reunion for **LARRY GRAHAM** of Graham Mfg. Co. in Holyoke (who is quite a tenor); **JOE MARTINELLI**, president of Monmouth Mill Supply Co.; **HUBERT JOHNSON** of Container Corp. of America; **JACK GEFALL**, Pulpaper Co.; **FRANK GALLEGO** and **BOB VAN SANT**, both of Elof Hannson Inc.; **STU BAKER** of Chase-Manhattan and **RUSS GARFIELD** of Ashuelot Paper Co.

Friday after the Convention was no day of rest for the APPA staff. Retiring president **DON LESLIE**, president of Hammermill Paper Co., invited the "gang" to be his luncheon guest that day. "One of the nicest gestures of a real, nice fellow," one staffer told P&P.

GUNNAR NICHOLSON, president of newly formed Tennessee River Paper Co., was one of the late **HAROLD CRABTREE'S** close friends, and left the convention to attend his funeral in Canada. Mr. Nicholson told P&P that his new offices are at 230 Park Ave., N.Y.C. 17; said he was lucky to get the former offices of Hollingsworth & Whitney Co.

LUCIAN A. WHITTLE, new president of APA and general manager, woods div., Brunswick P&P, convulsed his audience by saying that when he saw the company name, Champion-International, he thought, "My Gosh! Champion has taken over IP."

RAY HATCH, research director for Hudson P&P, and Mrs. Hatch, moved in from their home in the Bronx to the Belmont Plaza, just an easy walk to sessions. . . . **CHARLES SIBLER**, and his wife Mary, entertained his former associates on the Engineering Committee on Sunday night at their Tudor City home. Mr. Sibling, chief engineer for West Virginia, is "retired" now—his term on TAPPI executive committee as well and engineering chairman being over. . . . **JACK CRONIN**, who heads DuPont white pigment sales out of Cleveland, brought his son, Jack Jr., a Syracuse University engineering student. . . . **VANCE VALANDIGHAM**, mill manager, made a



"INDUSTRY IS REALLY ROLLING," says **GEORGE S. HERBERT** (l), Vice Pres. of Patton Mfg. Co., Inc., to **FRANK KOHLER** of J. B. Kohler Co. Attractive young lady is Mrs. Herbert. Patton builds all types of paper mill machinery from couch to reel drives.

quick trip from Potlatch Forests Inc., Lewiston, Idaho. . . . **HAROLD ZELLERBACH**, exec. v.p., **ROBERT T. KIMBERLIN**, v.p. of corporate development; **DR. WALTER HOLZER**, asst. to v.p. of mfg. (P. T. Sinclair), and **W. W. MOYER**, director of research, all of Crown Zellerbach, were making a visit to their new Gaylord "cousins" in Bogalusa, La. after Paper Week. . . . **J. D. and BILL ZELLERBACH**, **GABE TICOULAT**, **GEORGE GALLAWAY**, mgr. at Camas, **JIMMY HULL**, **JACK BARTON**, **ED STAMM**, logging v.p., were other CZ men on hand for Paper Week.

TOM ELMBLAD, nephew of **G. E. SEAVOY**, vice pres. in charge of sales, Whiting Corp. and its subsidiary, Swenson Evaporator Co., was in N.Y.C. after a trip to the new dissolving pulp mill near Chihuahua, Mexico, starting up Swenson's 4-stage washing and evaporators. His uncle was visiting the Ketchikan, Alaska, pulp mill at the same time. One day it was actually colder in Chihuahua.

W. E. (BILL) GREENE came to Paper Week working on his 82nd year and looking wonderfully fit. His company has long represented Stowe-Woodward. He flew up from his home at Naples, Fla., but fog at first grounded him at Fort Meyer, Fla. Undaunted, he rented a plane, "backed up" to Miami and was off again to the North. He said "I forgot about getting dinner." His wife had a birthday party for him on Jan. 18.

FRITZ BECKER and **SVEN FAHLGREN**, Bird Machine Co., left right after Paper Week for Switzerland, France and Sweden. . . . **CARLETON CLARK** disclosed that Clark & Vicario Co. is no longer a company—now it is **CLARK & VICARIO CORP.** . . . **PAUL WEST**, pulp supt., and **STEVE BAISCH**, head of engineering, at Thilmany P&P, found themselves in the midst of a Far West "reunion" at a Swenson Evaporator party. From the Coast were **BOB FLOLINE**, **ERIC ERICSSON**, **DR. JOE MCCARTHY**, **BILL CASSELL** (now back in Michigan with Hoad Engineering), **JACK WILCOX**, **LEROY SHANAMAN**, **MEDDER JOHNSON**, **HARRY THURLOW** (now in New York for Rayonier), **ACE MCCORRY** and **JIMMY HULL**.

NEWS AND SCOOPS: A hint of things to come in the South was revealed to P&P during the Convention by an equipment salesman who said the industry is experimenting with the treatment of kraft fibers with gamma rays to produce a fine paper fiber.

On the Commodore "Treadmill" one Canadian said that a paper company in Canada has developed a new process of tanning leather based on the use of lignin from pulp. It is quite revolutionary, he advised, adding that patents have been sought in some 50 countries.

Back to the South, one woods man-



PULP CONSUMERS—New officers of Association of Pulp Consumers, Inc. are (l to r) **SAMUEL R. SUTPHIN**, Exec. Vice Pres. Beveridge Paper Co., who succeeds Lane Taylor as Pres., and **T. STEWART FOSTER**, Pres., Foster Paper Co., who becomes Vice Pres.

New Pulp Consumers Officers

Lane Taylor, president of W. C. Hamilton & Sons, Miquon, Pa., turned over the presidency of the Association of Pulp Consumers, Inc. to Samuel R. Sutphin, executive vice president of Beveridge Paper Co.

Succeeding Mr. Sutphin as incoming vice president of the Consumers is T. Stewart Foster, president of Foster Paper Co., Utica, N.Y.

The Foster Paper Co. was founded by "Stew" Foster's father, Theodore, in 1904. "Stew" and his brother, William, carried on. The father and brother are deceased, but two third generation Fosters are with him in the company, Ted Foster II and "Pete" Foster.

ager predicts the day when the chemical and pulp and paper industries will be one, when the needs of the chemical industry will be fulfilled right from the tree.

After hearing John R. Emery, DuPont Co., describe the development of synthetic-fiber paper, one observer saw some significance in the blending of the cheaper woodpulp with the better qualities of the synthetics. For instance, he said, paper napkins with Dacron would be washable.

Pulp Record Set in Year 1955

All previous pulp records toppled when U.S. production soared to 20.8 million tons in 1955 (against 18.3 million in 1954), and consumption, including imported pulp, exceeded 22.4 million tons. The 13.7% increase in pulp production outstripped the year's rise in all industrial output.

A 40% increase in exports of American-made pulp was achieved when outbound shipments totaled 620,000 tons, compared with 444,000 tons in 1954, establishing the U.S.A. as a major supplier of pulp to the rest of the world.



TALL OIL FROM VALDOSTA—National Container's new tall oil plant will produce 2,000 tons of crude oil a month, at a profit of \$600,000 a year in continuous system.

Why This Tall Oil Boom in South?

Throughout the bustling Southern industry a new structure is becoming more and more familiar—the tall oil plant. Once an oddity, it is now almost as common a sight in some places as the lime kiln of the recovery system.

Until a few years ago, tall oil (pronounced "tal," not "tawl," after the Swedish word for pine tree), was usually burned in pulp mills as fuel or shipped to low priced users like phosphate producers. Today it is proving a tasty source of added income for those companies which have invested in the essential equipment.

Why the tall oil boom? There are several answers but the most important is the most apparent: it is profitable. Samuel Kipnis, president of National Container Corp., which operates tall oil plants at both its Jacksonville and Valdosta mills, says that the 2,000-ton-a-month Valdosta plant should earn about \$600,000 this year.

GREATER DEMAND—Where there is this kind of profit, there is always demand—and today the demand for tall oil is greater than ever. In 1953, Southern mills were producing about 175,000 tons of tall oil a year. By 1954, it was up to 200,000—the dollar-and-cents qualities of the process were just catching on. Last year it amounted to a "boom"—from 200,000 to 300,000 tons increase, a 33% boost. This year, industry leaders are predicting production will be up another 20%. They could probably sell more if they made more.

And, where plants formerly have simply turned out crude tall oil, some mills are now moving into the refining and distillation process. One of these is Union Bag & Paper Co., Savannah, Ga. Its new tall oil plant will refine the soapy substance by dis-

tillation. Engineers there predict that the 125-ft. distilling tower will boil out about 1,000 tons of oil a month.

At National Container, processing at both Jacksonville and Valdosta is now carried out in a continuous method—a new innovation. In most mills, crude oil is still produced in batch.

OTHER NEW PLANTS—Mills have also been announced at Hercules Powder Co.'s Hopewell, Va., plant, at Rayonier's Jesup mill (which will sell its product to the Hercules plant at Savannah), and at Port St. Joe, where the Glidden Co. of Cleveland has already broken ground for a plant to utilize by-products from St. Joe Paper Co.

Other industries can apparently use all the tall oil they can get. It goes to soap, textile, paint and varnish, plastics and many other chemical industries. With supplies of rosin raw materials, such as gum and wood rosin, dwindling, tall oil rosin is neatly filling the gap.

Since the kraft paper industry can supply the cheapest and most abundant source of the product, it seems fairly safe to assume that expansion in this field will continue.

U. S. Papers Note: How Britain Solves Newsprint Shortage

The British government has withdrawn its plan to remove controls over newsprint. It will continue to limit the number of pages printed by newspapers indefinitely.

This is its solution to newsprint shortage. If controls were lifted, it was feared big newspapers would deprive small ones of newsprint—the same complaint which has been heard recently in the U.S.A.

American Project in Mexico near South Border

Tom H. Mills, son of Lou Mills, long-time logger in Oregon and former president of Pacific Logging Congress, who will be vice president and administrator of a huge American pulp mill and diversified wood products project near the Guatemalan border of Mexico, probably will live in Mexico City.

Herman Simpson, pulp and paper consulting engineer, Central Bldg., Seattle, has recently made another trip to Santa Margarita, Chiapas state, 1,000 miles south of Mexico City, where the mills and plants will be built, utilizing over 28 billion ft. of hardwoods.

Frost Snyder, Tacoma, Wash., is president of the new company, Madreraya Maya, S.A.

More Pulp Facilities Are Planned at Rhinelander

Plans for major additional pulp mill facilities at Rhinelander Paper Co. are under way. This will call for use of more land area on mill property and, in its initial phases, action already taken is to have the historic Logging Museum—a familiar site to many visitors—moved off the mill property to another suitable location in Rhinelander, Wis.

Progress was also being made in the proposed St. Regis Paper Co.-Rhinelander merger, and with anticipated Securities Commission approval, the plan was likely to go to stockholders about the time this issue is printed.

"Mr. Baseball" Heads "Get-Together" Again

Norman O. Weil, "Mr. Baseball" of this industry and v.p. of W. S. Tyler Co., has served ten consecutive years as chairman of the Get-Together Party at national conventions of the Superintendents Association. He again is in charge for the annual, June 12-14, at Lake Placid, N. Y.

John Schuber III

John Schuber, of Solvay Process Division, Allied Chemical & Dye Corp., widely known in this industry from coast to coast, is recuperating in Syracuse, N.Y., from a heart attack. He was in a hospital there before press time, but his friends will be pleased to know he is coming along very well.



Can she depend on you?

This lady is holding the bag...perhaps it is yours. Whoever is responsible for the adhesive job should investigate the properties of Globe dextrines.

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PULP & PAPER — April 1956



SHIBLEY AWARD CONTEST conducted by Pacific TAPPI (l to r): Committee Chairman Dr. K. G. BOOTH, Manager-Administrative Services, CZ Central Research Dept., presents book awards to finalists SANGHO BACK, CZ Central Research Dept., Camas, FRANCES L. ZEBBS, St. Regis Paper Co., Tacoma, First Place Winner LYLE GORDON, Scott Paper Co., Soundview Div., Everett, C. E. MURRAY, Rayonier Inc., Olympic Research Div., Shelton.

Scott Winner Tells of Change to Ammonia

This year's Shibley Award, 19th annual competition sponsored by Pacific Section TAPPI to develop young people in the industry, was won by Lyle J. Gordon, project engineer, West Coast division of Scott Paper Co., Everett, Wash. Contestants presented papers in March meeting held in Crown Zellerbach's new research laboratory at Camas, Wash.

Dr. K. G. Booth, manager of administrative services of CZ Central Research, and chairman of the Shibley committee, presented copies of "Chemistry of Pulp & Paper Making" (by Sutermeister) four finalists and Mr. Gordon received \$100 for his "Interesting Aspects of Converting from Calcium to Ammonia Base Sulfite Pulping," based on experience at two of Scott mills now operating on ammonia base. Coos Bay Pulp plant at Anacortes converted in 1952, and was "a large-scale pilot plant" to assist in designing the ammonia base plant at the Everett mill in 1954.

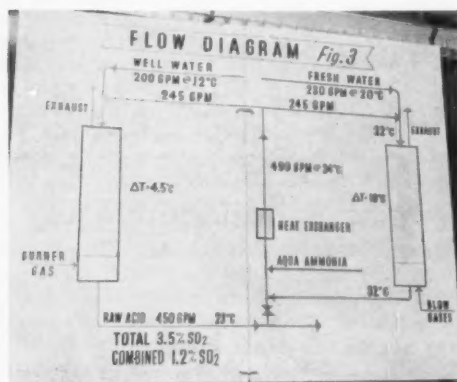
The conversion, he pointed out, does not require extensive equipment alteration, but suggests that further consideration be given to raw acid preparation and ammonia handling.

Prime components of the Everett acid system include two interconnected Jenssen towers and a heat ex-

changer. Blow gases enter one tower and sulfur dioxide from the burners goes to the other tower. The heat exchanger, an important factor in maintaining optimum temperature in the system, removes excessive reaction heat subsequent to adding aqua ammonia to SO_2 water.

Sangho Back, CZ Central Research Dept., Camas, discussed "Hydrosulfite Bleaching of Western Groundwood." His report states that Western groundwood can be economically brightened as much as 13 points (GERS brightness) with sodium hydrosulfite. Air in the pulp or in the bleach system lowers brightness, especially in cases of high consistency bleaching. Unbuffered bleaches, under selected conditions, yield the highest brightnesses.

Frances L. Zebbs, project chemist, St. Regis, Tacoma, discussed "Effect of Sulfidity in Kraft Pulping of Western Hemlocks." C. E. Murray, Rayonier, Shelton, presented "A New Basis for Interpreting Fiber Classification Data of Coniferous Pulp." Through use of a Clark 4-element fiber classifier he found that each screen retains fibers of similar characteristics—"fiber length range on the first two screens combined approximates that in the original wood, while the material on the third and fourth screens covers a much shorter length range." Relative amounts of whole fibers and fiber fragments of a pulp can be estimated.



SCOTT PAPER'S ammonia base acid plant arrangement as depicted by Shibley Award Winner LYLE J. GORDON.

Wehmhoff in Midwest as St. Regis Realigns Pulp Sales

Ralph Wehmhoff is new woodpulp sales representative for St. Regis in the Middle West, following upon previously reported recall of Bill McNair to New York from Cincinnati to be overall manager of pulp sales.

William Crosby continues as Eastern sales representative, working out of 230 Park Ave. headquarters in New York City.

Mr. McNair and his staff report to Howard "Pete" Peterson, general sales manager for all St. Regis kraft pulp and paper products.

Mr. Wehmhoff will headquarter at St. Regis office, 18 S. Michigan Ave., Chicago. He was born in Washington state, graduated from College of Puget Sound, and started in the Tacoma, Wash., St. Regis mill in 1951.

Progress Continues On Aliceville, Ala., Huyck Plant

Exterior walls are completed and 25% of the roof deck and structural steel has been erected for the \$3.5 million Aliceville, Ala. felt plant of F. C. Huyck & Sons, Rensselaer, N.Y., according to Daniel Construction Co. of Alabama, general contractors. It will be completed in May. The one-story plant will occupy 200,000 sq. ft. on a 200 acre site, with 3,535 sq. ft. to be devoted to offices.

C.E. Boiler and G.E. Turbine for KVP Co.

A new 900-lb. pressure Combustion Engineering boiler, first in southwestern Michigan, was recently placed in operation at KVP Co., Kalamazoo. With 4 pulverized-coal burners, it can produce 200,000 pph steam.

KVP also has added a new 7,400 kw General Electric turbo-generator. Cost of boiler and burner was \$2,000,000. The boiler was purchased from and installed by Combustion Engineering, Inc., New York City, while installation of the turbine is being supervised by the manufacturer, General Electric Co.

These units represent first steps in a long range program to modernize the plant's power house and increase total capacity from 380,000 to 500,000 pph steam.

Other new equipment added: Ingersoll Rand condenser unit and feed pumps; Cochrane deaerator and water softening; Prat-Daniel mechanical dust collector; Diamond Power Specialty soot blowers; United Conveyor ash handling; Hagan combustion and feedwater control; Midwest Piping pipes; and Johns-Manville heat insulation.

The Beloit Album

Engineers at work; an efficient roll filter; noise abatement; and other items of interest and significance to the world of paper as recorded by the Beloit camera's roving eye



LARGE, LIGHT DRAFTING ROOM at Beloit Iron Works—one of five in Beloit's huge engineering department—is devoted entirely to press sections and suction rolls. In the foreground are assistant chief engineers A. A. Neese (left) and D. A. Ely. Behind them are others of the skilled engineering staff involved in the production of outstanding paper machinery. Literally thousands of engineering and drafting hours go into each high-speed, high-production machine designed and built by Beloit.



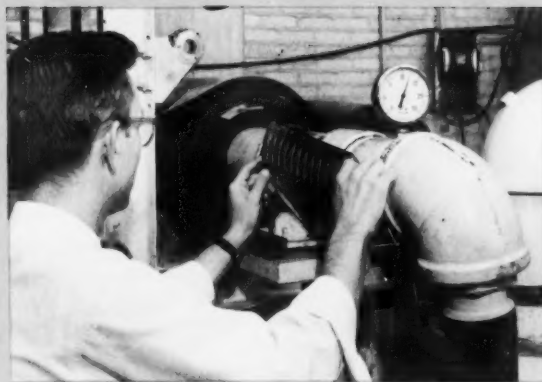
SCALE MODEL of the Beloit Roll Filter is examined by Beloit vice-president Lloyd Hombostel (left) and sales manager D. R. Simonds. Filter provides efficient full filtering without formation of heavy sludge deposits, saves installation space, cuts oil costs and laborious filter changing.



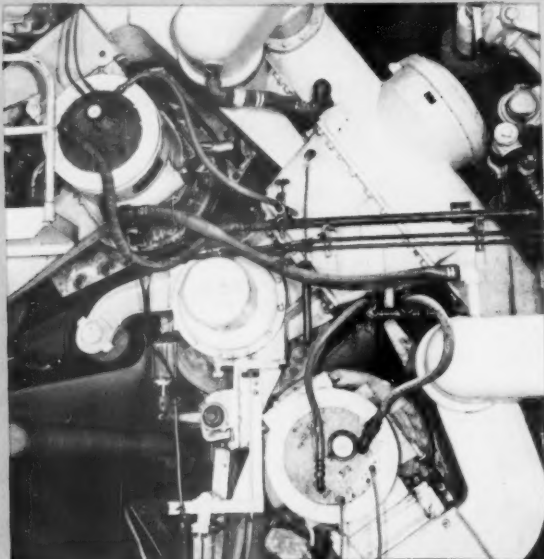
ESCANABA PAPER CO.'S resident manager G. S. Douglas (r.) and O. C. Christiansen, superintendent (center), check over their new press section on Beloit's erecting floor with Beloit's assistant sales manager F. G. Ramsden. Customers checking work in progress are always welcome.

Noise Abatement

An important part of Beloit's design development program has been devoted to noise abatement. Both in extensive laboratory setups and in actual mill situations, Beloit engineers have employed the most modern recording and experimental equipment. As a result of this program Beloit is able to offer equipment which will effectively reduce suction roll noise on running machines. On new machines the noise can be controlled very effectively with newly developed silencers and drilling patterns. A continuing study of the problem is being made. Equipment and experiments relative to noise abatement are shown below and at the right.



SILENCER is here shown being readied for installation in an experimental suction roll by Beloit engineer J. F. Atkins. Beloit research engineers have designed and tested countless suction roll silencer patterns in an effort to reduce noise on all types of suction rolls.



TWINVERPRESS on Beloit 290" newsprint machine, Great Northern Paper Co., East Millinocket, Maine is equipped with one type of Beloit silencer. Beloit engineers are continually checking mill installations in a determined effort to further reduce suction roll sound levels.



FUNDAMENTAL STUDY of noise generation has been conducted by C. B. Dahl, Beloit research engineer. In background, Beloit's experimental press section can be seen as set up in laboratory. This press operates at speeds in excess of 3000 fpm at 20 inches vacuum.



A FRIENDLY PIPE is smoked by English visitor Sir Robert Sinclair of Imperial Tobacco Company (of Great Britain and Ireland), Ltd. and St. Anne's Board Mill Company, Ltd. in a conference with executives of Beloit Iron Works. Seated (l. to r.) are Beloit chairman E. H. Neese, Beloit vice-president W. S. Wood, Sir Robert Sinclair, and Beloit president H. C. Moore.



3000 FEET PER MINUTE registers on tachometer held by Beloit engineer C. H. Hillman. This reading was registered during a recent test on newsprint dryers to check the effects of positive condensate evacuation and steam fit behavior at speeds up to 3400 feet per minute.



BELOIT INTERNATIONAL Corporation C. A.'s vice-president G. J. Bertrand (*right*) discusses the foreign market situation with Beloit assistant secretary H. E. Tower. M. Bertrand's Paris office is the focal point of Beloit operations in Europe and the Scandinavian countries.



BOWATERS SOUTHERN Paper Corporation's project engineer J. F. McInnis (*r.*) gets first-hand progress report on Bowaters' new newsprint machine. Others (*l. to r.*) are T. I. Vickerman, Beloit engineer; A. G. Olson, sales engineer; and J. D. Shaver, Bowaters engineer.



60" DRYER gets final check from R. Reindl (*l.*), dryer shop foreman, and J. R. Clothier, sales department. Beloit dryers get special attention during shipment—rugged protective coating, waterproof paper wrap on exposed surfaces, exacting care in loading for safe delivery to mill.



STROBOSCOPIC BALANCING in Beloit Iron Works roll shop finds roll balancer E. Stretz adjusting the pickup to achieve perfect balance. By this means, Beloit roll balancers can determine values to within a fraction of an ounce, and balance rolls with a minimum of setup time.

your partner in papermaking

BELOIT

PAPER MACHINERY



WHEN YOU BUY BELOIT... YOU BUY MORE THAN A MACHINE

this message sponsored by Beloit Iron Works, Beloit, Wisconsin, makers of high-speed, high-production paper machinery since 1858

paper... America's fifth* largest industry

seek your career in PAPER... the industry of opportunity!

send for FREE booklet that gives basic facts about the paper industry and lists complete range of career opportunities. Address: "Paper Career," Box 1244, Chicago 77, Illinois.

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An Important—and to many people surprising—statement about the paper industry is headlined in this series of Beloit-sponsored ads (shown here in miniature) currently appearing in the *Wall Street Journal* and other publications.

These graphic reminders of Paper's practical, cultural, and economic importance to the U. S. are an extension of an educational campaign designed to emphasize the wide variety of "career" opportunities in the paper industry.

Every member in the paper field can help by proclaiming the facts about one of America's fastest growing and most essential industries.

Note: A set of three posters (15" x 20") suitable for display on plant and office bulletin boards will be sent to you on request without charge—Beloit Iron Works, Beloit, Wis.

this message sponsored by Beloit Iron Works, Beloit, Wisconsin, makers of high-speed, high-production paper machinery since 1858

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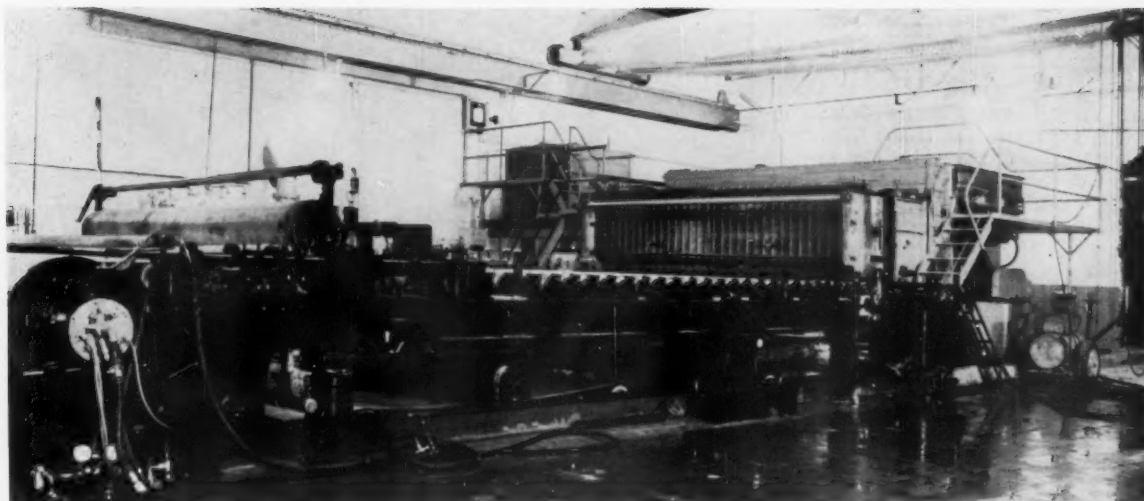


your partner in papermaking



WHEN YOU BUY BELOIT... YOU BUY MORE THAN A MACHINE

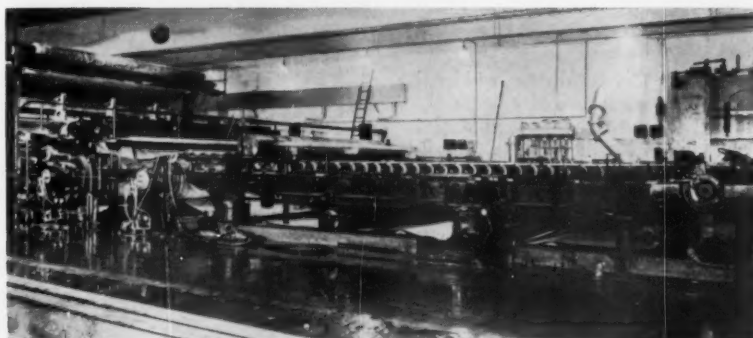
BELOIT
PAPER MACHINERY



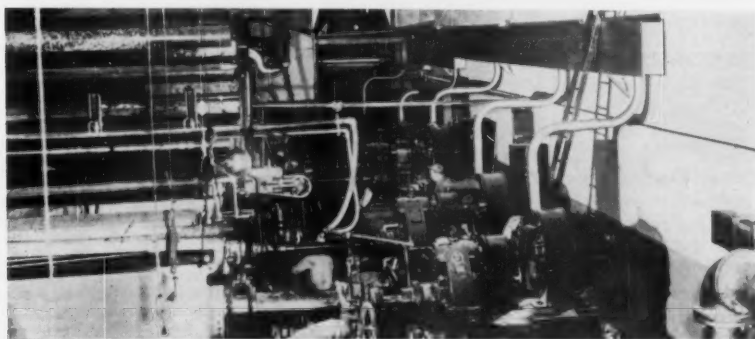
WET END OF BELOIT NO. 1 MACHINE at Johnsonburg, Pa., mill of New York & Pennsylvania Co., showing new stainless-lined mixing box and head box. On the Fourdrinier, level wire runs from breast roll to couch roll. This effectively lengthened the forming area.

N. Y. & Penn Rebuilds, Improves Machine

Beloit printing paper machine speeded up 200 fpm to 265 fpm, Jamar-Olmen installs new type hood and fan systems



FOURDRINIER AND PRESS SECTION OF REBUILT MACHINE. New E. D. Jones stock screens and a Beloit inlet have been added to the machine, and there are five new table rolls. There is a pneumatic guide roll in the return run of the wire. A suction first press has also been installed.



DRIVE SIDE OF THE MACHINE. New gear units replaced old ones on the drives for the different sections. Electrical controls have been completely modernized for better regulation and higher speed. Machine now operates at 650 ft. per min.

● By modernizing the No. 1 machine at its Johnsonburg, Pa., mill, New York & Pennsylvania Co., Inc. is able to get better formation, greater strength, improved surface and outstanding cleanliness in its quality paper for magazine printing. At a cost of \$474,000 it rebuilt and completely modernized the machine.

Speed has been increased from 450 fpm to 650 fpm. Output of the machine has been boosted 62%—from 90,000 lb. per day to 146,000.

HIGHER QUALITY PAPER—Finished printing paper from No. 1 now has improved formation, greater strength, better surface and exceptional cleanliness, says A. G. (Gus) Paine, vice president. Originally built by Beloit Iron Works, it has a new mixing box and a new riffle box, both by Beloit. Both are lined with stainless steel for cleanliness and smooth level flow. There are no dead spots, and therefore paper stock cannot adhere to inside of the boxes and become contaminated. The smooth surface also minimizes clinging of particles of metal or foreign matter that might be picked up by the stock.

E. D. Jones & Sons stock screens of late design have replaced the old screens, and a new Beloit inlet has been added. In addition, there are five Beloit new table rolls.

MORE FORMING AREA—The effective forming area on the Fourdrinier has been lengthened by a level wire running from the breast roll to the couch roll. There is a pneumatic guide roll in the return run of the wire. A Beloit suction first press has also been installed.

Gear units on the drives for the different sections have all been replaced by new Westinghouse units. The electrical control system also by Westinghouse, has been completely modernized for better regulation and higher speed. Six new Beloit dryers have been installed. Four are paper dryers and two are felt dryers.

NEW AIR SYSTEMS—Jamar-Olmen Co. of Chicago furnished and installed the complete air systems for the rebuild of this paper machine, including a new open type Transite hood with exhaust fan systems.

The two heating and ventilating systems, which supply sufficient air for 100% balance of the exhaust systems, are complete with temperature controls and adjustable supply outlets arranged for summer cooling in the working areas and winter heating of the roof.

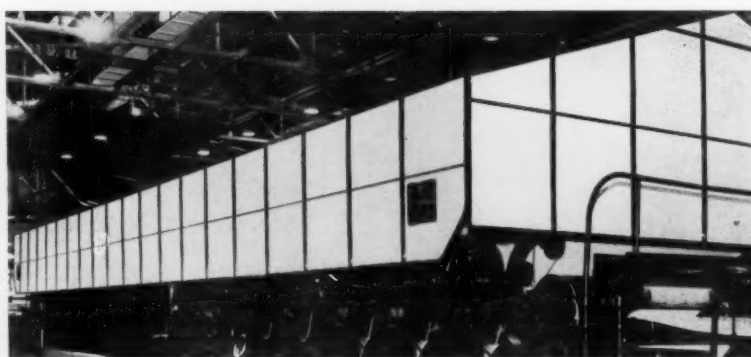
Jamar-Olmen also installed a Hi-Jet system for positive removal of the vapors from the dryer pockets.

Brown Co. to Convert to MgO

Brown Co. and Babcock & Wilcox Co. recently announced an agreement whereby B&W will license Brown to install its magnesium bisulfite pulping and chemical recovery process at Brown's Berlin, N.H. plant. Both companies had been studying application of the MgO process for the Berlin plant for about a year. This will be the first such installation in the eastern part of the U.S. to recover both chemical and heat values in waste sulfite liquor.

The magnesium-oxide base used in the pulping process is collected in dry form at the rear of the recovery boiler after incineration of the combustible constituents contained in the waste liquor. The MgO base then recombines with sulfur dioxide released in the combustion of waste liquor in acid absorption towers which follow the recovery boiler, to form magnesium bisulfite cooking acid.

FOURTH INSTALLATION IN N.A.—Babcock & Wilcox is the exclusive licensing agent for the magnesium-oxide chemical recovery system which it developed in cooperation with Howard Smith Paper Co. of Canada and Weyerhaeuser Timber Co. Though



NEW TYPE HOOD AND AIR SYSTEM. Six new Beloit dryers were installed. New type hood with exhaust fans and an inlet air system with heaters and filters were put in by Jamar-Olmen to increase drying efficiency.

Design of the winder has likewise been improved. A new center wind reel has been added, and the winder has been modified and rebuilt for faster, more efficient operation; both by Beloit.

The rebuilt No. 1 trims to 181 in. With the exception of the hood and air system, installed by Jamar-Olmen, rebuilding and modernization was accomplished by mill maintenance crews.

General supt. of the Johnsonburg mill is Henry Bell, and mill manager is Neal Jones.

is scheduled for operation during the spring of 1957. Brown has retained E. & B. Cowan of Montreal as consulting engineers.

Roy Troutman in Hospital

Roy E. Troutman, sales manager of White Pigments for DuPont, was unable to attend Paper Week. A serious eye ailment put him in Hahneman Hospital in Philadelphia for an extended stay.



McCourt's Sales Duties Enlarged

EARL M. "MICKEY" MCCOURT is named to direct sales of Consolidated Water Power & Paper Co.'s Products—pulp, by-products, etc. manufactured at its Appleton, Stevens Point, and Abdo-wagam divisions in addition to Paperboard and Corrugating Material produced at Wisconsin Rapids and Biron divisions, announces Stanton W. Mead, President. Mr. McCourt, a graduate of Lawrence College, Appleton, Wis., has been with the company 35 years, serving in sales capacities since 1931. He was Sales-Service Director for Enamel Papers from 1937 to 1953 when he was appointed a Company Sales Manager. Mr. McCourt's organization and products under his sales direction include: C. K. CROUSE, Sales Mgr., Paperboard Boxes, Cartons, and Tubes; GEORGE SAWYER, Sales Rep., Waxing, Tissue, and Manifold Papers; HAROLD LAUSMAN, Sales Rep., Mitscherlich Pulp and By-products; HAROLD LARSON, Sales Rep., Paperboard and Corrugating Material.

Sales of Enamel Paper continue under Harold Murtfeldt, Chicago.

the Brown Co. installation will be the first to be made in the eastern U.S., it will be the fourth commercial installation in North America. The first was by Weyerhaeuser at Longview, Wash.

Ketchikan Pulp of Ketchikan, Ala., began operating the second installation in May, 1954. Weyerhaeuser has the third under construction at Grays Harbor, Wash. Based on results obtained by early installations, B&W engineers report that the MgO process is an economic method for the continuous use of waste sulfite residual liquor with both heat and chemical recovery.

BROWN'S WILL BE LARGEST

The B&W chemical recovery boiler for Brown is designed to process 750,000 lbs. of waste liquor solids per 24 hours. This is approximately 40% larger than any previous single MgO installation made by the company. The boiler is designed to operate at 875 lbs. pressure and will produce 160,000 lbs. of steam per hour at 825° superheat.

Work on this project will proceed rapidly so that a building may be completed before the winter of 1956-57. The completed recovery system

POWELL RIVER UNBLEACHED SULPHITE PULP



★STRENGTH

★COLOR

★CLEANLINESS

★SERVICE

★DEPENDABLE SUPPLY

★ **POWELL RIVER SALES COMPANY LIMITED**
STANDARD BUILDING VANCOUVER, B. C.



New York & Pennsylvania Company selected

Jamar-Olmen engineered Air Systems to increase production for their Johnsonburg Mill.

This project included a Paper Machine Hood with Exhaust Systems, Roof Heating & Ventilating Systems, Make Up Supply and Summer Cooling Systems, and a Hi-Jet System, designed and installed by Jamar-Olmen Company.

A Jamar-Olmen Air System designed to your specific requirements can improve your production . . . quality . . . and mill conditions at the best initial investment. Write today for further information from Jamar-Olmen experienced Engineers . . . at no obligation, of course.

JAMAR-OLMEN COMPANY

ENGINEERS • CONSTRUCTORS

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New York 17, N.Y.

CENTRAL OFFICE
162 North Clinton St.
Chicago 6, Illinois
Phone DEarborn 2-2033

MANUFACTURING PLANT
320 North Harding Ave.
Chicago 24, Illinois

Yankee Ingenuity at Work in Holyoke

Converting plants as well as mills have developed new products and ideas in Old Colony's great little "Paper City"

• The 107-year-old "Paper City" of Holyoke, Mass., has a terrific spirit of enterprise and a prodigious amount of Yankee ingenuity. In PULP & PAPER's visits to its 9 paper mills and most of its 25 converting plants, this was the dominant impression brought away.

Incidentally, in this last of three articles on the "Venice" of America, PULP & PAPER desires to express its appreciation of the wonderful hospitality and cooperation accorded this magazine not only by the mills and converting plants, but by the suppliers and machine builders for this industry, the banks, the Holyoke Power Co., and the Chamber of Commerce. What's that about "Down East" taciturnity?—must be a myth!

MORE "INCUBATOR BABIES"—Each year sees one or more new "incubator babies"—converting operations or other small industries move into Holyoke, starting out in low rental existing factory space. Most of them later move into enlarged, new quarters. The "incubator" stage—a word you hear often in Holyoke—permits them to escape high initial plant construction costs.

Right now there are some 20 "incubator" plants, 8 of them paper converters. National Blank Book Co., Eastern Specialties Co. and Tecnifax are examples of companies, discussed last month in this series, which have "matured" to their own plants but started as "incubator babies." Also described last month were several others, which might be described as still technically in this industrial hatchery—Stonington Paper Tube Co., Laminated Papers Inc., Paper Services Co., Inc., Trophy Papers, Inc., and Laminated and Coated Paper Co. But they are growing so fast, the inference they are still hatching seems unrealistic.

Yankee enterprise and ingenuity are revealed in the expansion plans of the paper mills themselves. Several of them have quietly bought new machines or ordered new ones. For example, two new 90 in. Sandy Hill Fourdriniers already installed at American Writing Paper Corp., a new

Black-Clawson (Bagley & Sewall) machine for Chemical Paper Co., a new Fourdrinier at Whiting Paper Co., modernization at Parsons Paper Co. etc.

SAW NEED FOR A NEW PRODUCT—As an example of Yankee ingenuity among converters take the case of Larry Graham—not the Larry Graham of International Paper Co.—but the LG of Graham Mfg. Co. Bert Kent, assistant to the president of Hadley Falls Trust Co., and newly-elected president of the Chamber of Commerce, suggested PULP & PAPER talk to Mr. Graham while in Holyoke. So one morning Mr. Graham, Mr. Kent's son-in-law, and Jerry Cray, salesman, dropped in a PULP & PAPER editor's hotel room.

Fumbling in the carton which he had brought along—like an itinerant merchant groping for his wares, Mr. Graham brought out a roll of household towels and affixed it to a plastic holder, all the while keeping up a continual chatter. "Pull a towel off," he instructed. We knew what would happen as the same situation prevails in our own home. But we complied. The roll stuck and just a torn piece came loose. Mr. Graham's eyes sparkled. "Try again," he urged. We did and got three sheets.

His point made, Mr. Graham said there are roll toilet tissues in 95% of U. S. homes but only 46% have these household towels. Why? Simply because their convenient usage has not been fully accepted.

Then Mr. Graham told his story. "One day, my wife Muriel (Bert Kent's daughter) asked me why didn't I invent a way to use these towels without getting into the same trouble you just had. So I got to work and this is the result."

He took his prize out of the box. They were household towels packaged and cut in a box similar to a cleansing tissue package. That was just the half of it, he said. The problem was what to do with roll holders presently in use. With that he showed us the ends of the box which had a special hole fitting easily into the regular roll holder.

Mr. Graham started marketing the product on his own and then he got



"WHEN A PRODUCT GETS INTO A RAT RACE we get out of it," is thinking of Morart Gravure, Inc. This company likes to tackle jobs that nobody else wants—specializes in decorative laminants. Here (l to r), ED A. GLESMANN, Sales Mgr., ED H. ALLEN, Gen. Mgr./Treas., and CHARLES E. COOMBS, Tech. Dir.



PROUD OF NEW EQUIPMENT at Chemical Paper Mfg. is company's Gen. Supt. JOHN RILEY. "Our new machine is well built and well balanced," he says.



FIGURES IN HOLYOKE STORY. ART SHELDON (left) moves some 40 truckloads, on an average day, mostly paper products, for pool car shipments. Paper mill equipment movement is also one of his specialties. GARY J. FORTE (right), Res. Mgr., Remington Rand Div., Sperry-Rand Corp., whose Holyoke facilities were set up to give quicker service to Atlantic seaboard customers.

See letters from readers on our Holyoke articles, page 4

an offer from a big company. If this company thought enough of the invention to want it, he decided to try his own hand at it.

50% OF NEW PRODUCTS YET TO COME—Mr. Graham's philosophy is that "better than 50% of products to be used in the next 25 years have yet to be developed."

Graham Mfg. Co. was started by his father and mother about 22 years ago in the napkin field, expanding later into toilet tissue and paper towels in the industrial field. After World War II, specialties were a means for the small business to get ahead, says Mr. Graham.

Today, Graham employs 50 people. Other products they sell are Barb-Ees, which replaces both the neck band and the linen towel the barber puts around your neck, and San-Ees, for use by beauty parlors and for professional disposal service to the medical and dental field.

A NEW WET-WEB PROCESS—In a special meeting of Holyoke's industrial leaders with PULP & PAPER, it was remarked that Dave Schoales, president of Texon, Inc., with plants in Holyoke and across the river in South Hadley, had developed battery separators.

The industry has long heard of wet-web processing as an alternate between beating-coating and dry-end coating. Wet-web processing or coating is a reality at Texon.

Wet-web processing, explained Mr. Schoales, is an outgrowth of experiments by Isadore J. Novak of Raybestos-Manhattan Co. in the early 30s at Stratford, Conn. Mr. Novak believed a new way to make brake linings should be similar to papermaking.

He tried dry-end binding or coating and beater sizing but neither worked to his satisfaction. He then decided to

NEW PRODUCT UNDER THE SUN. JERRY CRAY (left) shows easy pull-out feature of new Hand-Ees paper towel package (box fits standard roll holders), while LARRY GRAHAM, Pres. of Graham Mfg. Co., holds familiar roll.



take the web of fibers after it had come off the wet end of the machine, passing it through a bath of saturant and then through the conventional drying process.

When the wet web passed through the saturant and then dried, explained Mr. Schoales, a startling action occurred and the resultant material was of a different character from anything previously seen. This was caused by the creation of a mechanical and chemical bond between saturant and fibers. As the chemical bond is the strongest bond possible, continued Mr. Schoales, Mr. Novak had obtained something no one else had.

About the same time DuPont was also seeking a substitute for cloth as a coating base and joined with Raybestos. Experimental costs were offset by marketing of one of the products as a midsole material for shoes. DuPont withdrew in 1946, selling out to employees and other outside interests, who signed a licensing agreement with Raybestos.

This new company, Texon, Inc., used its own sales force to increase considerably the volume of business in shoe, luggage and leather goods

industries by improvements in quality.

In 1948 the facilities of their mill at Russell, Mass., were inadequate and the Carew mill at South Hadley was bought and its facilities revamped.

The dream of DuPont for a cloth substitute as a coating base was realized in 1951 and this new Texon material has high tensile and tear strength and will drape and conform as cloth has previously done.

Nowadays, says Mr. Schoales, two old Fourdriniers are doing things that are still considered impossible by others. Today, he added, Texon makes some 20% of all innersoles and is sole supplier of battery separators to several car manufacturers:

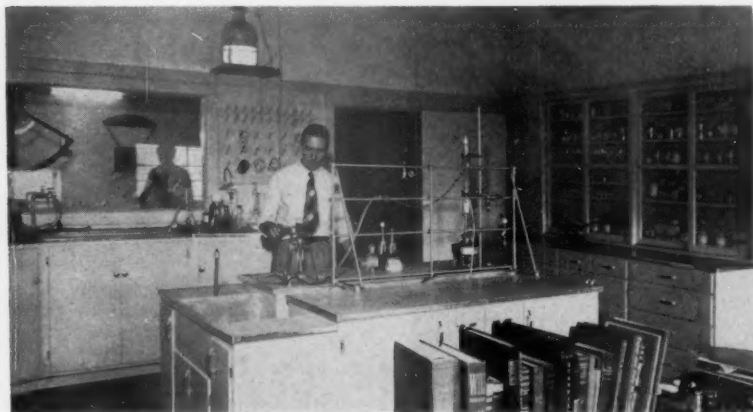
TOUGH JOBS ARE THEIR DIET—"When a product gets into a rat race, we get out of it," said Ed Glesmann, sales manager, Morart Gravure, Inc. This company likes to tackle jobs so tough nobody else wants them.

Morart Gravure is another terrific growth story in Holyoke, started by President Charles Moriarty some 27 years ago with a gummed tape and Kidder press.

Several years ago Morart had 4 presses. Today there are 14 presses; some with 4 colors. They have 80 employees and 2 plants on shift work. Some 20,000 sq. ft. of space acquired at time of PULP & PAPER's visit gives them a total of 100,000 sq. ft.

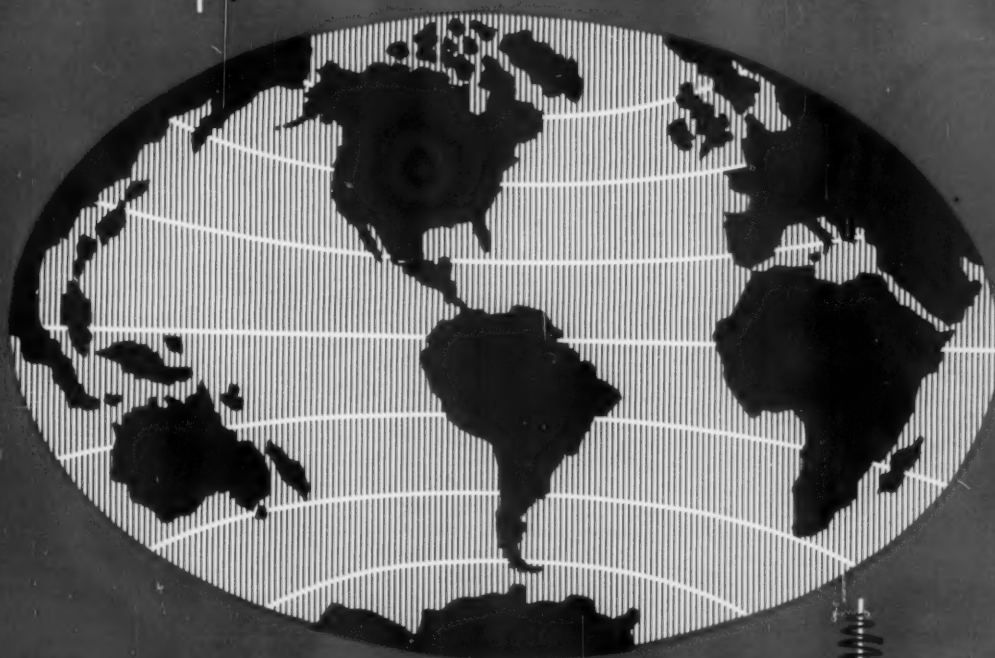
"Diversification is the key to our success," said Charles Coombs, technical director. "We are part of a terrific growth industry because of the technology advances in resins and the continued and new uses for these materials."

Morart is a specialist in decorative laminants. Strictly a converter, it doesn't own the paper it prints. The customer supplies the raw stock, usually of high alpha content from a mill such as Wrenn Paper Co., Middletown, O., and the stock is printed at Morart and then shipped to the cus-



EXPANDED LABORATORY FACILITIES at Whiting & Co. are typical of expansion and modernization throughout Holyoke's paper industry. Seen in newly modernized Whiting lab is CHARLES BACKUS, Tech. Dir.

WOOD PULP PAPER

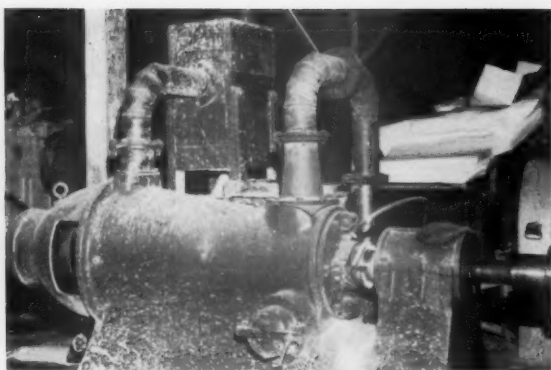


*Offices and representatives in 60 cities in the United States,
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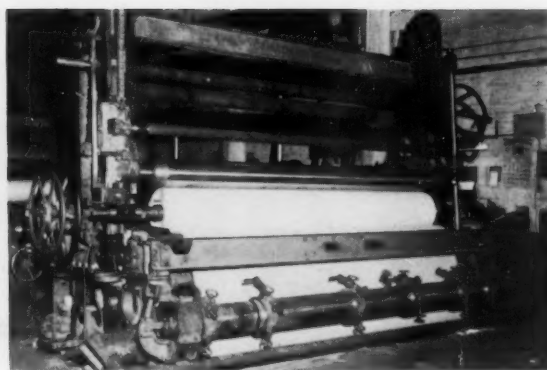
BULKLEY DUNTON & CO., INC.
BULKLEY DUNTON PULP CO., INC.
BULKLEY DUNTON PULP CO., LTD.—LONDON
BULKLEY DUNTON PAPER CO., S. A.
BULKLEY DUNTON CELLULOSE EXPORTS, INC.
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ORGANIZATION
295 MADISON AVENUE, NEW YORK 17, N. Y.



NEW STOCK PREPARATION equipment is a keynote in Holyoke's multi-million dollar expansion. This is E. D. Jones Fibremaster at Chemical Paper Mfg. Co., with Accru-Set permitting accurate adjustment of plug position and absorbed hp.



HIGH SPEED WINDING and slitting equipment are necessary accessories with new or modernized paper machines in Holyoke. This Cameron high speed winder at Chemical is designed for speeds up to 2,500 fpm.

tomel who adds kraft paper saturated with phenolic acid and submits it to high heat and heavy pressure and presto there's finished dinette table top.

AMERICAN PAD FINDS CONVENIENCES—For 70 years American Pad & Paper Co. has found Holyoke a good place to be located for its paper converting operations, reports Don Taber, treasurer.

In his opinion there are two important reasons why anyone looking for a place to set up a paper conversion operation should take a good hard look at Holyoke:

(1) Holyoke has a good supply of men and women experienced in handling paper and familiar with almost any kind of paper operation. Furthermore, Holyoke has a good grade of labor and a high caliber of labor leadership.

(2) American Pad finds it very convenient to be in a city where so many types of paper products are manufactured and easily available for its needs. Furthermore, friendly competitors in this area are always cooperative and freely help out one another when in need of a special size of board, cover stock, binding, etc.

HOLYOKE WAS THE ANSWER—“Back in 1921 it never occurred to us to look elsewhere than Holyoke, the Paper City,” says Frank C. Heywood, chairman of the board, The Marvelum Co.

“We needed paper to convert and it was here in Holyoke,” he said. “We needed suitable floor space and it was available here. We needed labor that could handle paper and this labor was abundant in Holyoke. We needed banking facilities and bank credit and the Holyoke banks were friendly and their officers and directors understood paper.”

“We needed power and water and

we found both plentiful in Holyoke. We needed transportation to the country's markets and found Holyoke ideally located with paper products being sent from all New England to Holyoke for consolidation in paper product cars for shipment to all America.”

“In fact,” Mr. Heywood concluded, “we found Holyoke to be ideal for paper conversion.”

HAMPDEN CONSIDERED CAREFULLY—Hampden Glazed Paper & Card Co. has been in operation in Holyoke since the company was founded in 1880. This has made it possible to consider carefully the matter of favorable location for converted paper operations with reference to procuring raw materials as well as market potentialities, states Rufus F. Blount, treasurer and general manager.

Holyoke, as a city, appears to be ideally situated for industries engaged in paper converting, he says, for the following reasons:

First, relative to securing raw stock as well as colors and chemicals, adequate sources are conveniently located to Holyoke. Also a large number of consumers who utilize converted products are likewise located in the Eastern U. S., many in or close to New York City; therefore excellent service can be provided from this city. The power facilities are not only adequate but rates are low. Water supply is good and of high quality.

Suppliers and Equipment Firms Like Being in Holyoke

Holyoke is also a city of suppliers to the paper industry.

B. F. Perkins & Son, Inc. began operations in 1873 and today is one of the large roll manufacturers. Now managed by the fourth generation of the Perkins family, it specializes in the

designing and making of quality products.

In addition to paper finishing and bleaching equipment, Perkins also makes the world-famous mullen tester. Recently, the company announced its new supercalender with a modern design.

REMINGTON RAND PLANT HERE

—B. F. Anderson, Remington Rand vice president in charge of manufacturing, says his company established its printing plant at Holyoke in 1946 only after a careful survey of the entire area. The Holyoke facilities were set up to enable Remington Rand to give quicker service to its Atlantic seaboard customers, he told PULP & PAPER, adding that “because of the nature of our operations which include forms for our Kardex visible systems as well as intricately printed punched cards for our tabulating equipment, we had to find a location where an intelligent and cooperative labor market was available.”

STRATEGIC FOR HERCULES

The manufacturing and distributing facilities which Hercules Powder Co. has maintained at Holyoke for many years occupy a strategic role in its operations, says Reginald Rockwell, general manager of Hercules' Paper Makers Chemical Department. “As a matter of fact,” he added, “we are building additional facilities for manufacture of wet-strength resins for paper at Holyoke.”

A WIRE CLOTH INDUSTRY—The Holyoke Wire Cloth Co. has manufactured Fourdrinier wires for the paper industry since 1919. Starting with old-time hand looms, this company has progressed with the paper industry and today its Fourdrinier wires are woven on modern, fast weaving looms.

At present, this company plans a new building to house a 250-in. loom



SUPPLIERS KEEP STEP. Additional facilities for those who supply the Holyoke paper industry are needed to keep in step.

Here is airview of Holyoke plant of Hercules Powder Co., which recently increased facilities for wet-strength resins.

and a stretching table to accommodate wires for it. Both loom and table are under construction in Germany and are expected here by late spring.

MANAGEMENT AND LABOR ARE MATURE—From labor's standpoint, management in Holyoke is good. Most of the paper companies are family-owned with deep roots in the community.

To PULP & PAPER, Harold Martin, a labor arbitrator, said: "I am very impressed with the mature relations between management and labor when they sit down to negotiate.

Mr. Martin also expressed admiration as did top paper management, for the spirit and knowledge of the craftsmen and their pride in the industry and in their work.

Good labor relations are enjoyed by a group of paper manufacturers who bargain with the International Brotherhood of Paper Makers, International Union of Operating Engineers, and International Brotherhood of Firemen and Oilers, through their respective AFL locals. Three labor agreements are negotiated each year on a multiple-employer basis and the agreements cover approximately 1,500 employees in several mills.

Representatives of employers and unions are experienced in collective bargaining and have been negotiating for several years, in atmospheres of understanding and friendliness. It is seldom necessary to use grievance procedure, as set up in the agreements.

Mr. Martin has been working with paper manufacturers in Holyoke as labor adviser since 1939. It is recognized that his understanding of the labor problems and his sense of fairness has been of considerable value.

RAILROAD ASSEMBLY CAR POINT—Some 40 LCL railroad cars a night roll out of Holyoke, a transfer and assembly point for less than carload shipments in western Massachusetts. These extensive LCL shipments

provide overnight delivery to Boston, New York and Philadelphia with third morning delivery in Chicago.

Incoming "reefer" cars from the West Coast offer special rates for return paper product shipments. A shipper can load products for three different destinations on the Coast in one car at full carload rates.

On an average day some 40 truckloads of primarily paper products are consolidated for pool car shipments to New York, Philadelphia, Chicago, etc., by Art Sheldon and his fleet of 52 trucks. Mr. Sheldon, president of Sheldon Forwarding Co. and Sheldon Transfer & Storage Co., says he specializes in paper handling and his firm is the oldest carloading company in the U. S.

Sheldon also ships cars to local truckers in principal cities thereby offering door to door shipments. About two cars a week go by water through the Panama Canal to the West Coast.

This firm is also in the rigging business and is experienced in moving paper mill machinery, servicing about 80 mills in New England, New York and New Jersey. "We've been at it 93 years," Mr. Sheldon told PULP & PAPER.

Holyoke is on the junction of main East-West and North-South highways. It is a short 5-minute drive to main highways leading to Boston and the New York State line. Two new bridges under construction will bring workers directly into Holyoke from nearby communities in a matter of minutes.

New York City is a 4-hour drive. The Massachusetts Turnpike, soon to be open, will provide quicker movement of motor freight East and West and will also enable Holyoke to draw more labor from the surrounding areas.

This is "The Holyoke Story" as seen by PULP & PAPER in a week's visit to this American Venice, featured by many on-the-spot interviews with prominent paper manufacturers and converters and others.

Key Personnel Named As Western Kraft Expands

Western Kraft Corp. has undertaken basic planning for nearly doubling capacity of its plant at Albany, Ore., according to Exec. Vice Pres. Robert V. Hansberger, in charge of production, sales and expansion. The plant, originally designed with subsequent enlargement in mind, currently produces kraft linerboard at rate of 120 tons per day. By the summer of 1957 production will be 200 tons.

The Western Kraft plant is unusual in that it has no wood breakdown facilities. All raw wood arrives as screened chips derived from nearby sawmills and plywood plants.

The company will add dryers to the paper machine, another recovery boiler, additional refining, washing and screening facilities, increasing digester and evaporator capacity.

The company expects to establish an engineering department at the mill. Vice Pres. W. O. Hisey and Chief Engr. John H. Beaver are in direct charge of expansion. Others include Plant Engr. Keith Miller, Production Mgr. John Fery, and Harlan Reins, formerly of Weyerhaeuser Timber Co., Longview.

Production, headed by Gen. Supt. Hugo Trygg, includes Mr. Fery, Asst. Supt. Tom Syme, Chief Chemist George Ahlquist, Maintenance Supt. Earl Shook, formerly with Publishers' Paper Co., and Merrill Morrison, Jack Rogers, William Feeney and Claude Bryant, shift foremen.

From Straw to Woodpulp

Here's another case of a change-over from straw fiber—now hard to get in some areas—to woodpulp (especially hardwoods). Crandon Enterprises of Chicago have purchased the old Hinde & Dauch strawboard mill in Fort Madison, Ia., and are modernizing it to produce hardwood semi-chemical pulp and 9 pt. corrugating board.



EXCLUSIVE PULP & PAPER REPORT

How National's "Nature Ponds" Work

The first complete report on how National's Valdosta mill gets 98% BOD reduction in effluent—without chemicals

● In 1950, the National Container Corp. took a carefully calculated risk. It decided to build a paper mill in a location previously turned down by others as unsuitable.

The location, Valdosta, Ga., is a city of 20,000 and lies in the heart of the richest yellow pine belt in the nation. This attractive and lively seat of Lowndes County had successfully urged the passage of a bill in the state legislature enabling it to issue revenue certificates to acquire land, construct and operate an industrial waste disposal system. All in all, a lush apple in any company's eye.

But Valdosta had its drawbacks. Sixty miles inland and boasting only a small river, the Withlacoochee (actually a tributary of the Suwannee), Valdosta's future as a paper town looked pretty grim until National Container came along.

The success of National's investment in Valdosta depended upon the thoroughly investigated but previously untested theory of National's vice president and general manager, William T. (Bill) Webster.

This theory involved not only a process but a unique way of developing it in cooperation with the regulatory officials. Under the process, organic wastes can be reduced and oxygen dissolved in effluent by running them through a series of standing ponds and cascading brooks before being dumped into the river.

Valuable background data developed by National Council for

Stream Improvement, particularly in experiments it carried out at Louisiana State U., was used by National Container.

National built the mill and it has been a success. The firm has been producing more than 500 tons of paper a day at this installation. Top production to date: 671 tons. Its ponding system is actually a pilot disposal system from which much has been learned and much is still being learned. How does it work? What are the secrets of this operation?

Here for the first time is the complete story of the system, revealed exclusively to PULP & PAPER at the end of mill's second year in operation.

CART BEFORE THE HORSE—When National decided to build its mill in Valdosta in 1950, company officials realized the stream pollution problem at an inland mill would naturally pose greater problems than those of a mill on tidewater. Mr. Webster decided to put the cart before the horse and tackle the waste disposal problem before the mill was built.

To do this, the problem was attacked in two ways. First, armed with a small-scale county map and a jeep, Mr. Webster and several engineers began scouting the terrain around Valdosta looking for a spot which would afford a natural drop in elevation to the river and also enable the creation of several retention ponds. They found what they were looking for at Clyattville, Ga., 12 miles south

of Valdosta and 5 miles north of the Florida state line.

Aerial maps were prepared and the mill site was chosen to conform with the eventual location of these ponds. A consulting geologist was called in to study the area and it was decided that the entire effluent system would be designed before any announcement was made regarding the mill site.

"UNOFFICIAL BOARD OF DIRECTORS"—Step No. 2 was to take every conceivable precaution against polluting the stream and running afoul of criticism from health officials and press. A unique meeting was called.

Present were health and stream improvement officials from Georgia and Florida, the county and the national scene. Mr. Webster called them his "unofficial board of directors." Included were Dr. Harry Gehm and Russ Wingate, of the National Council for Stream Improvement; Dave Lee, John Wakefield and William E. Beck, of the Florida State Board of Health; Bill Wier, of the Georgia Board of Health, and Dr. J. Gray Smith, the Lowndes County health commissioner.

Mr. Webster invited these men to actually help plan the effluent disposal system for the mill and to take an active part in decisions which would effect this system. They jumped at the chance.

By Sept. 1951, plans were developed and contracts signed for construction of the mill. In the following



ENTIRE PRIMARY SYSTEM CAN BE SEEN ON ONE VIEW. This panoramic view of the whole primary ponding system of National's Valdosta mill was taken by PULP & PAPER from top of salt cake tower. It shows strong storage pond (covering almost three-quarters of picture), settling pond (left center) and oxidation pond one (extreme left). Dike can be seen in pond at left. Large oxidation pond No. 2 is behind trees at top, only partly seen.

months, the "unofficial board" was called in on several occasions to discuss and probe the many problems which cropped up in the modeling of this unique system.

And—during the following years—the "board" was called in at regular intervals to review the operation and make additional suggestions on how it should be changed and improved. Result: Each of these men took a personal interest in the experiment, and National profited from the combined experience of not only its own technicians and engineers, but experts in the pollution field as well.

WHAT THE PONDS DO—The mill was designed initially for a 220-in. Bagley & Sewall Fourdrinier machine to produce 500 tons a day of paper from a 5-digester pulp mill. Today there is a new No. 2 machine making multiwall paper, bringing total ton-

nage to 700 tons eventually. Effluent from this mill would be discharged through 2 sewers into a system of 7 ponds connected by a rapidly-moving stream called Jumping Gully Creek.

Four of these ponds comprise the main or primary system and are immediately adjacent to the mill. The other three—2 to 4 miles away from the mill—make up the secondary system. The creek empties into the Withlacooche River 7½ miles below the mill on the Florida side of the state line.

This system was originally designed so that the river DO (dissolved oxygen) should never be reduced below 2.5 parts per million parts due to the release of system effluent. This is basically accomplished in two ways. The effluent is retained in the ponds for from 1 to 70 days apiece, permitting bacteria to grow and consume organic wastes (sugars, acids, lignin, alcohol) while natural oxidation of the

waste is encouraged as it flows over a series of natural cascades into the secondary system and from there into the river.

Oxidation occurring through bacterial activity reduces the biochemical oxygen demand (BOD—the measure of oxygen required to oxidize the organic matter through the agency of bacteria) and large, shallow ponds promote oxidation by affording aeration through the natural activity of air currents. Although it was planned to add chemical agents as nutrients for bacteria and to provide synthetic oxidation, they have never been used since the mill began operating.

HOW THE SYSTEM WORKS—Effluents from the mill are carried in 2 sewers to the ponds. The first carries strong waste—evaporator condensate, turpentine water, lime mud, size and salt cake spillage—into the 88 acre,

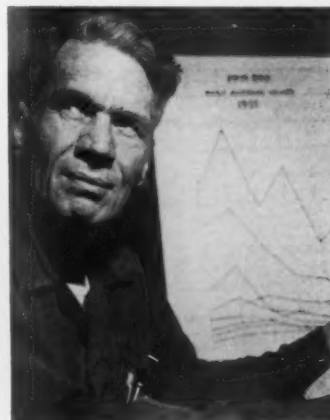
Guiding Lights for National's Effluent Disposal System at Valdosta



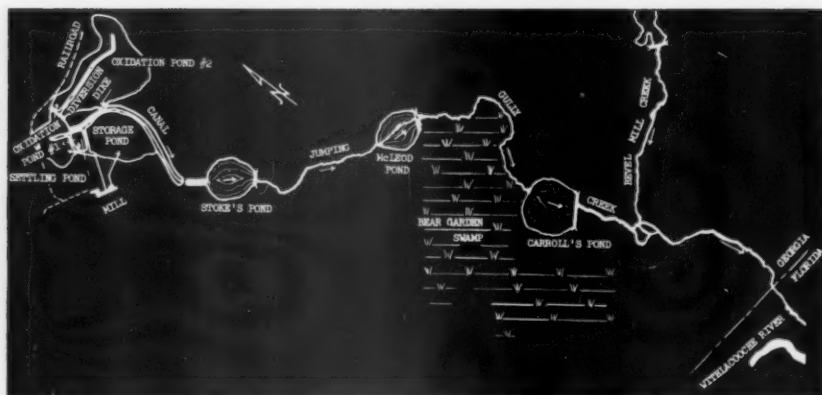
HIS THEORY WORKED. Vice Pres. and Gen. Mgr. WILLIAM T. WEBSTER had vision plus a workable plan to back it up.



VALDOSTA'S PLANT MANAGER KARL M. GUEST stands in front of "wet" end and digester room of mill manages.



"KEEPER OF THE PONDS" is HARDY "SKIPPER" CROOM who keeps tab on reports and interprets tests of pond efficiency.



HOW PONDS ARE LAID OUT. Upper left is primary ponding system and mill. Large pond at top is second oxidation pool. Arrows from mill indicate two sewers into storage pond and settling pond. Three ponds across center of map are secondary system. At upper right, seasonal lake and stream add fresh water to Jumping Gully Creek during rainy seasons of the year. River is lower right.

4 ft. deep strong waste pond where it is held for upwards of 70 to 80 days. Since pH is high and little BOD reduction is expected, the pond is kept sealed and a small amount of the waste is transferred daily into the second, or settling pond, by means of a pump.

The second sewer discharges weak waste—fiber-bearing material from the screen room, deckers, refiners and paper mill—directly into the settling pond. A Sveen-Pedersen flotation process is provided.

After mixing, weak and strong waste lose flow velocity and remain in settling pond 1 or 2 days. Then they flow over a concrete spillway equipped with a homemade device designed to induce oxygen into the waste. This device, called a "flutterbudget" by its designer, is a dual flow device by whose agency the flow over a low weir interferes with the flow through an orifice and causes a wave-like motion which entraps air bubbles in the waste stream.

From the settling pond, waste goes into the first of 2 oxidation ponds. Oxidation pond No. 1 is 3½-ft. deep by 50 acres and is almost bisected by a narrow diverting dike which controls the natural movement of the waste before it reaches an overflow weir emptying into the second oxida-

tion pond. It is retained about 10 days, then pours naturally into No. 2.

The second oxidation pond is the largest—195 acres—and the shallowest 1 to 5 ft. Sheet piling around the edges prevents leakage and a long narrow dike acts as a diverting force the same as in No. 1. Here waste can remain 40 to 50 days before it discharges through a free discharge rectangular orifice into the canal which leads to the secondary system.

The secondary system includes Stoke's Pond (44 acres, 7 ft. deep), McLeod's Pond (not in use) and Carroll's Pond (62 acres, 4-ft. deep). Jumping Gully Creek, which connects them, runs 3.5 miles and loses 100 ft. elevation. Wastes are retained about 18 days in Stoke's, another 14 days in Carroll's. McLeod's Pond is more or less an insurance policy. Presently it is not dammed. The creek runs a rough course about 4 miles from Carroll's into the river, further reducing BOD.

This, then, is the system designed to accept some 1.5 million gals. of strong waste and 4.5 million gals. of weak waste a day. It is interesting to note that about ¾ of the total waste by volume but only 36% of the BOD load is carried in the weak waste. The strong waste carries 64% of the BOD load in only ¼ of the pollutable

effluents. Since some chemical products such as residual mercurials and phenols seriously deter bacteria growth, they are carefully controlled in the mill.

THE MEN WHO RUN THE MILL

—As an experimental project, the ponding systems are constantly undergoing tests. An accurate check is made and recorded on every phase of the ponding operation. Managed by Karl M. Guest, the mill has a technical staff headed by Supt. Joseph C. Clark. But since the ponds are almost a department in themselves, Hardy (Skipper) Croom is what might be called "keeper of the disposal system."

Working under Mr. Clark, Mr. Croom supervises the daily tests made at the mill and interprets the results. Mr. Croom is an old hand at water treatment having designed the water treatment system for several Florida towns. Until he came with National last year, he had been working on a water system in Venezuela.

Plant Engineer Joe Mailhos and one of his assistants Jim Gillespie, design and perfect any new concepts or ideas which might come up from time to time. They were both in on the original planning of the mill. The actual construction of the pollution control



NATIONAL'S UNIQUE "UNOFFICIAL BOARD" IN ACTION. At left, EDWARD A. WIEDE, Lowndes Co. Sanitarian, DR. J. GRAY SMITH, Lowndes Health Comm.; Right (l to r) WILLIAM E. BECK, JOHN WAKEFIELD, Fla. Bd. of

Health, JIM GILLESPIE, National, DAVE LEE, Fla. Bd. of Health, B. H. BUCK, DR. HARRY GEHM, National Council for Stream Improvement, JOE MAILHOS, National, RUSS WINGET, National Council, BILL WIER, Ga. Bd. of Health.

system was headed by B. H. Buck, plant engineer at Jacksonville before his retirement, who worked closely with Mr. Webster and managed, from time to time, to shave off expenses here and there until the final figure for the effluent system came to about \$450,000, considerably less than the cost of a biochemical plant handling the same amount of waste.

Operating cost on the ponding system is very small. It is measured in technician's salaries, maintenance and the amount of gasoline it takes to drive the route every day.

HOW TESTS ARE MADE—Dozens of tests are performed on waste and along 5 points in the ponding system every week, and complete records are kept on every phase of the operation. The technical staff knows, for instance, what the BOD reduction in all 6 operating ponds is, the rate of river flow, DO content of wastes and of the river above and below the mill dump, waste flows and content.

Daily routine samples are tested and a daily waste treatment report submitted to the mill management, enabling it to draw an accurate picture of exactly how successful this system has been in the past two years. At the end of each month, all this data is compiled and submitted in report form to Mr. Webster, Mill Manager Guest, and other officials. Similar reports are also sent to the "unofficial board" at regular intervals to keep them informed on how the operation is going.

Parshalls at several points in the mill are used to check BOD and flows in the two sewers. Everything that is used in the mill and which will eventually appear in the effluents is tested for its BOD quality.

Daily tests are made in the lab to determine DO prior to and after a 5-day bacteria incubation period. Dilution prepared for all testing for BOD and DO is done in accord with "standard methods" (APHA). A portable "lab" at the back of the lab's station wagon enables the technical staff to prepare BOD tests on the spot. Final DO is checked in the lab by means of a thiosulfate process.

GROWS GIANT NUTS—Other tests also fall into the technical staff's bailiwick. When peanuts planted near one of the ponds grew to giant size without any adverse effect, the technicians began making experiments on the possible use of effluents in crop fertilization.

HEADACHES: HOW THEY WERE CURED—As was to be expected, the experiment has not been without problems and headaches still



AT TREBLER SAMPLER, technician TELMAN DANIELS takes check of strong waste flow and also gets sample to check strong BOD.



STRONG WASTE FLOWS into storage pond in this canal. Level changes are designed to create turbulence in waste, build up DO.



BRISTOL FLOW METER is checked daily to learn weak waste flow at settling pond inlet.



OUTFALL DAM at oxidation pond No. 2 marks end of retention in primary system. Waste flows to right and goes into secondary ponds.



BOD SAMPLE TAKEN at oxidation pond No. 2 is prepared for testing in "mobile lab" on back of station wagon. DO tests are prepared also.



FLOATING BARREL with wire and boards between prevents chunks from island (rear) from clogging up the spillway at outfall of Stoke's pond.



KEY MEN IN DISPOSAL SYSTEM (l to r): JOE CLARK, Tech. Dir.; JIM GILLESPIE, Field Engr.; B. H. BUCK, who built ponds, and Plant Engr. JOE MAILHOS, looking over blueprints.

pop up with regularity. Some were anticipated, others hit the mill "out of the blue." Some, which seemed monumental at first, are looked on now as trifles. Others were attacked, at first, with a kind of "dutch courage" that goes along with any beginning experiment. Today, however, with the backlog of experience the technicians and "unofficial board" have picked up in working with the ponds, there is less hit-or-miss chance involved in the solution to the occasional "bugs" in the system.

One of the first big problems the technical staff had to face was one which they were unable to do anything about. After 10 months of operation, during the drought of 1954, lab workers noted a serious drop in the DO of the river water above the mill effluent dump.

Investigation uncovered an underground spring which discharges 18 million gals. of water into the river a day. The DO content of this underground water is almost zero. In periods of low water, the spring contributed almost a third of the water flowing in the river. This means the reduction in BOD and build up of DO in the wastes has to be even more critical than was originally planned.

In the summer of 1954, three months after the mill began operating full time, the ponds became infected with mosquitoes. One health official called it "the worst mosquito scourge I've ever seen." This posed a 2-headed threat.

It was not only a health menace, but the larva were feeding on bacteria in the ponds and seriously reducing their effectiveness. Larvacide proved futile since it added as much BOD as the mosquitoes were responsible for.

County and state mosquito authorities were called into quick session. It was suggested that the banks be cleared back about 20 ft. from the pond edges and the edges deepened. Then the pond levels were raised and lowered in rapid succession. Mosquitoes disappeared.

Next, large chunks began to break

off islands in 2 of the ponds, threatening to clog up dams. One "board" member suggested that the grass and mud on these islands might be beneficial to adding oxygen. Booms were designed some 10 to 12 ft. in front of the dam—floating barrels with boards stretched between them to keep the floating islands away from spillways.

National began operation in the early months of the worst drought in 35 years, an unexpected challenge since daily discharge of effluent is essential to the success of the system. The company didn't have to wait long to check its "safety margin"—the ponds themselves. Designed to hold more than the daily load, they can also be used as a storage area in times of low river flow and thus provide a safeguard.

The Sveen-Pedersen flotation process, although it has been doing a good job, was not designed to handle the load of heavy fiber running into it. Engineers are now at work designing a screening process by which large fibers can be removed before the solids reach the Sveen-Pedersen. Once this is in operation the settling pond will have to be dragged once every 10 or 12 years. Now it is a two or three times-a-year job.

WHY FISH DIED—Technicians even have to do a little undercover work occasionally. When dead fish show up, the "piscatorian detective force" goes to work. Once, more than 100 dead suckers were found floating near the river bank. Technicians feared the worst until they noticed other more lively fish jumping in the river nearby. They autopsied the dead fish and learned they were killed by an illegal type fishing net.

Accurate records are kept of all experiments designed to knock out the system's bugs. These records contain valuable information. Among other things they will tell you that one type of odor killer puts 20 parts per million BOD in the pond and would take 40 tons of water to oxidize. A certain kind of slime killer doesn't add BOD—

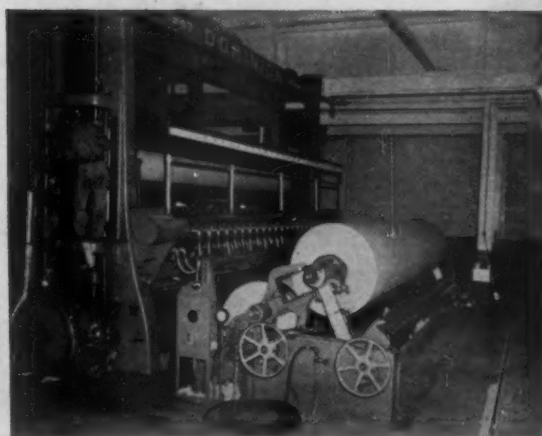
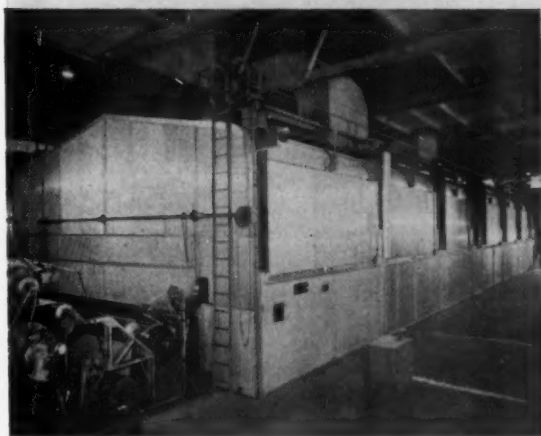
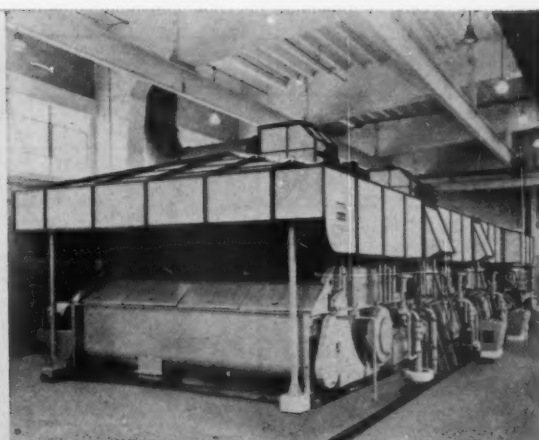
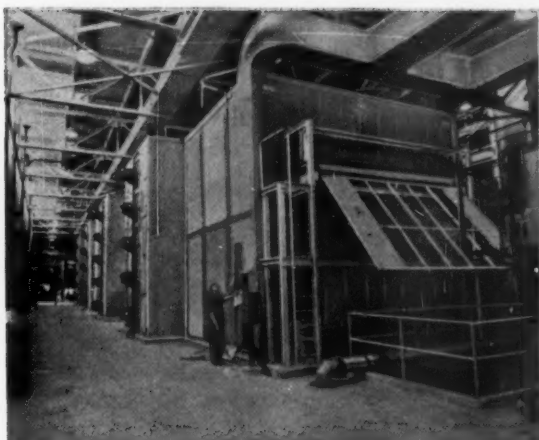
but it doesn't take care of slime either. Another removes slime just fine but kills bacteria. The record doesn't overlook a thing.

IS IT A SUCCESS?—On Jan. 31, the first strong waste began flowing into the storage pond. The following day, weak waste began running. By April 15 the first strong waste was transferred into the settling pond and on June 11 Carroll's pond was overflowing and the first waste from Valdosta's "nature treatment" was on its way into the river. Now, after almost two full years in operation, let's hear what the experts say about the Valdosta ponds.

At a recent meeting of National's



ROUGH COURSE of Jumping Gully Creek adds more oxygen to effluent as it flows from last pond to river, two miles away.



HOW DID PAPERMAKING GET THIS WAY?

Year after year, the papermaking industry increases its capacity for meeting the steadily growing demand for its products. Only continuous research and development of new and better methods and machinery could keep the industry at its growing pace.

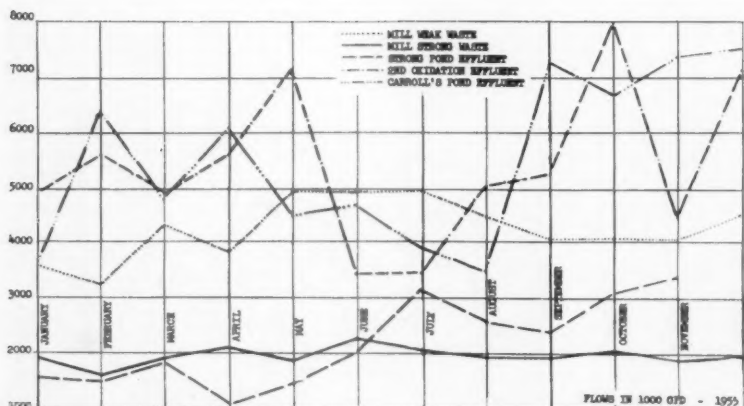
No other single organization has contributed more to this rate of progress than ROSS Engineering. Paper men can remember the part played by such ROSS developments as the Briner Economizer, Grewin System, High Pressure

Calender Cooling, Externally Heated Pulp Dryer, Cycle Conditioner, Totally Enclosed Hood and the variety of supplementary air systems.

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GRAPH SHOWS EFFLUENT FLOW. Waste flows from mill are shown in this diagram for 1955 in 1,000 gals. per day. Flow from Carroll's Pond to river reached more than 7 million gals. a day by December. Strong effluent, over 3 million.

"unofficial directors" attended by PULP & PAPER, Mr. Lee of the Florida Bureau of Sanitary Engineering more or less summed up the success of the system when he said:

"There has been no change in the river since National came to Valdosta. The creatures in the river don't even know the mill's there."

Mr. Wakefield, head of the sewage and industrial water section of the Florida Board of Health was more eloquent. Said he:

"This is by far the most elaborate system and the most efficient in the state. It removes a greater percent of the pollutable material than any other system. It is a prime example of utilizing topography to the nth degree."

Figures don't lie. The record shows just how successful the operation has been. Strong mill waste now averages about 1,000 ppm BOD a month. It once ran up to 2,200 ppm in one month. Weak waste averages 350 ppm BOD. In one month it went as high as 700. The combined high in ppm BOD during 1955 was only 900, and the average of the combined effluents out of the settling pond now only runs about 200 ppm BOD.

A rough idea of how the BOD is reduced through the ponds can be seen in these figures, now several months old but still valuable since they show how effective the ponds are in BOD reduction: strong waste into storage pond, 500 ppm BOD, out of storage pond, 300 ppm; weak waste from mill, 250 ppm; combined waste into settling pond, 200 ppm, combined waste out of settling pond, 175 ppm; flow out of oxidation one, 115 ppm, flow out of second oxidation, 50 ppm; flow out of Stoke's pond, 36 ppm, out of Carroll's pond, 13 ppm; flow in Jumping Gully Creek 500 ft. above river, 30 ppm, river water above outfall, .6 ppm, below outfall, .3 to 1.1 ppm.

By Dec. 1955, the BOD load was effectively reduced to below 2.5 lbs. of BOD per ton of board—a reduction of 95%. Today, average BOD reduction runs from 95% to 98%. At the river, BOD runs about 8 ppm on the average. DO at the river dump has run as high as 8 ppm, higher than the DO in the river above the dump! It averages from 3 to 5.7 now.

Because of the effective reduction in BOD, DO in the river did not change one month last year when the river slowed to record minimum of 73 ft. a second (normal flow; 1,200 ft./sec.). During this period the mill was discharging 5 to 6 million gals. of effluent a day.

ADVICE TO OTHER MILL BUILDERS—Two aspects of this system seem vitally important. One was expressed by the Industry Stream Improvement Council's Harry Gehm, the other by the State Health Board's Bill Wier. Said Mr. Wier:

"If industry would stop looking for

two trunk line railroads, a big river and a good town and really try to do something about these problems that cause differences of opinion and hard feelings, it would be a wonderful thing."

Dr. Gehm commented:

"This Valdosta system is the most satisfactory form of effluent treatment there is. It works 100% of the time—as long as you have conditions where it will work."

Conditions where this system will work are, naturally, a prime prerequisite. Any company which considers a disposal system of this kind must first make certain that the topography is suitable for the operation.

But the apparent success of National's mill could, feasibly, open up an entirely new concept in the location of mills, one which would also fall in line with what Mr. Wier and other stream improvement advocates hope for.

Time Inc. Becomes Sole Owner Of East Texas Pulp & Paper

Time Inc. has concluded negotiations with Houston Oil Co., former partner, for full title to East Texas Pulp & Paper Co. and Southwestern Settlement and Development Corp. which owns 660,000 acres of timber near the mill, Charles L. Stillman, executive vice president and treasurer of the publishing company, has announced.

The mill will continue on its present basis. Present facilities, he said, are unsuited to manufacture of newsprint or magazine stock, which would require the addition of a new paper machine and groundwood mill.

East Texas company, will maintain its present work force and management, headed by Exec. Vice Pres. and Gen. Mgr. R. M. Buckley.



BACK IN LAB (left), technician makes final step in thiosulfate test to determine BOD load in wastes and river water, taken at half-a-dozen different testing stations. Result will be recorded with results of all tests. **RIVER WATER MIXED** (right) with distilled water is "oxidized" to prepare dilution solution for use in making BOD and DO tests at mill lab.

NEW...
Bonus Powered
too!

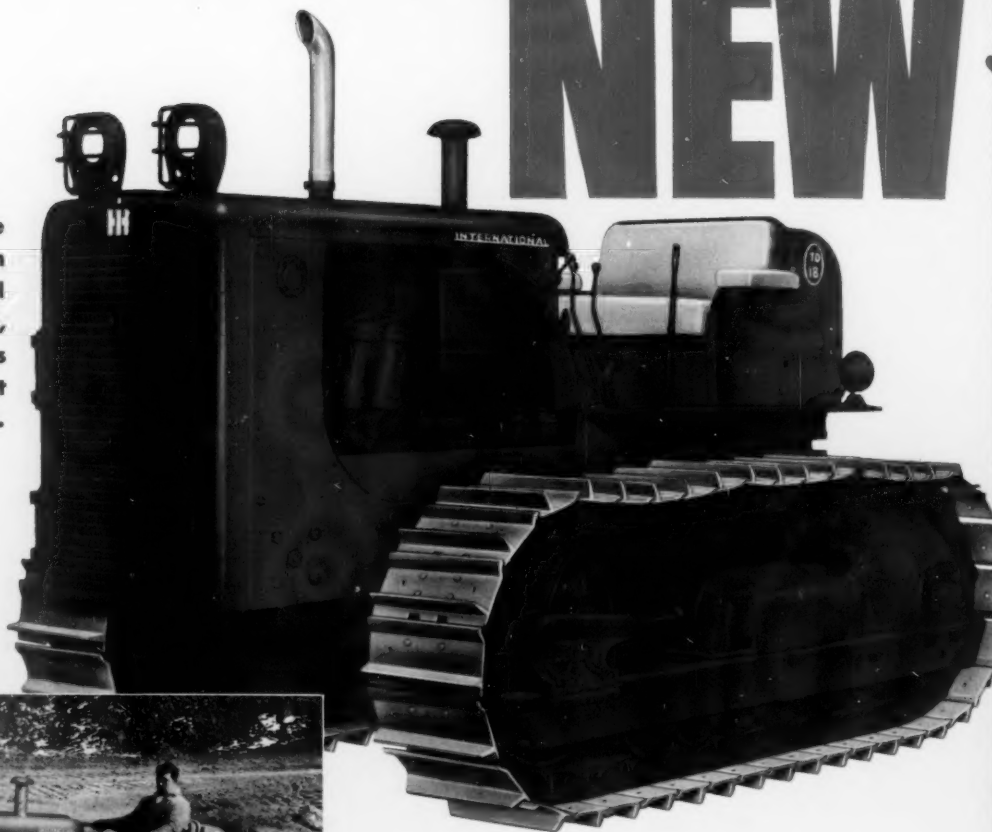


NEW

**124 Net Engine
Horsepower. In
International
Drott Machines,
Engine develops
134 Net
Horsepower.**

182 Series

**TD
18**

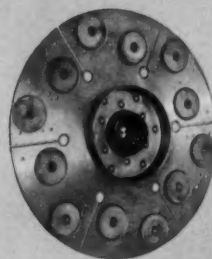


TD-18 diesel (series 182) delivers 103 drawbar horsepower, with weight of 29,050 pounds (without equipment). All-weather electric starting, standard equipment. "New look" visibility, operating ease never before available. New heavy-duty, swinging-door type radiator guard is "standard"—for carrying heavy front-mounted equipment. Gives big tractor performance in pioneering under roughest conditions. Powers 3-yard International Drott Skid-Shovel, anywhere.

No costly delay from a "killed" or cold engine—you start fast! Famous International gasoline-conversion diesel starting—actual "in-seat" starting—is standard equipment on this new crawler line. With "push-button" ease, you get seconds-fast starting, whether the engine is cold, or stopped! And you're on the job seconds-fast, when minutes are dollars.

Ceramic Engine Clutch Facings Save power, defy heat, prolong life! Uncomplicated, familiar-to-all engine clutch design of these new crawlers have power-holding, heat-defying, long-lasting Ceramic facings. These facings reduce lever-pull up to 50%, provide amazing heat immunity, add service freedom, cut upkeep!

New . . . 500-hour lube intervals with new metal-to-metal, track roller seals! You save the time and expense of frequent inspections or lubrications, with the new full-floating, cartridge-type, track roller seals provided on the TD-24, TD-18, and TD-14. These precision-lapped, metal-to-metal seals are so effective they give you safe 500-hour intervals between roller lubrications!



Steps up a size... in job range and capacity!

**50 Net Engine Horsepower.
In International Drott
Machines, Engine develops
55 Net Horsepower.**

61 Series

**TD
6**



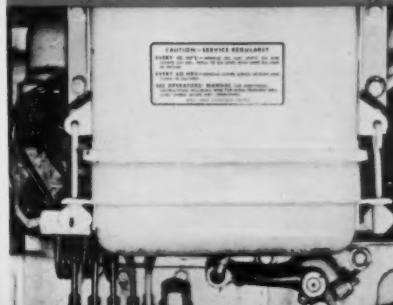
TD-6 diesel (series 61), 41.5 drawbar hp, up 23%! Steps up a whole size in work capacity and earning ability. Operating weight (5-roller model), without equipment, 8,890 pounds. Powers 1-yard International Drott Skid-Shovel or Four-In-One; serves as clean-up dozer unit on any-sized contract; versatility and low operating cost to do many sizes of jobs for every size of contractor.

Call
ing
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job
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Full-view, one-glance panel saves time—cuts effort! One quick glance at this new full-view panel, with centralized instrument grouping, gives the operator the instant check-up, to assure that lubrication, generator, and cooling system are "parking" for full production!

New Fold-over Seat Aids Fast, Centralized Servicing! New fold-over seat of the TD-6 and TD-9 models allows operator to give you the time and convenience advantages of centralized steering clutch assembly servicing. Lubricant fittings are conveniently grouped and fully accessible!

Thorough air filtration assured by new under-hood cleaner! Instead of being "in your lap," or a knee-bumping obstruction, air cleaners of the new International crawlers are side-mounted—for easy accessibility, yet out of the way. They have big capacity and high efficiency, too, for positive air filtration!

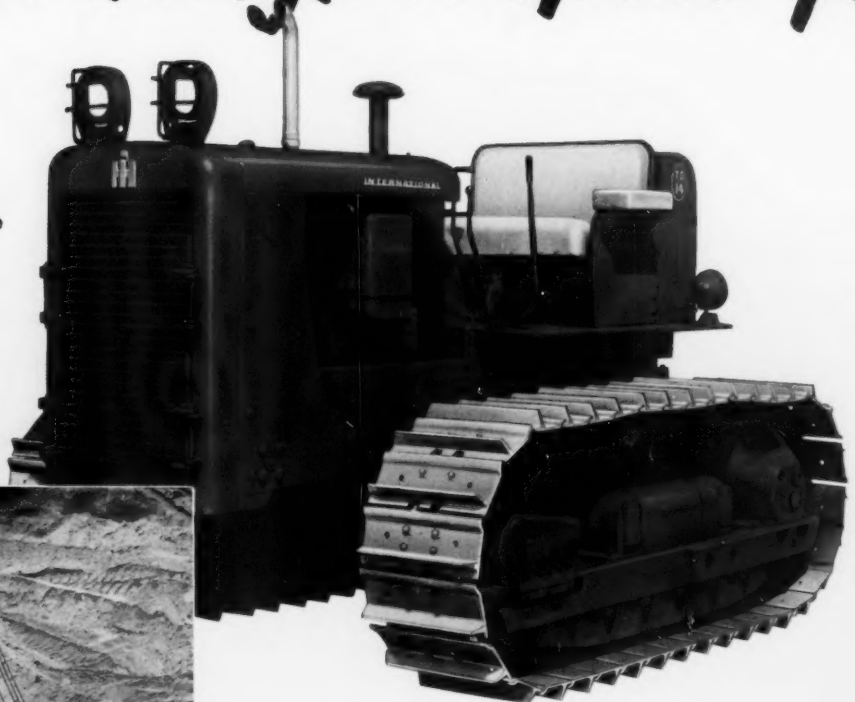


International Crawlers give *plus new design to speed you*

**95 Net Engine
Horsepower.**

142 Series

**TD
14**

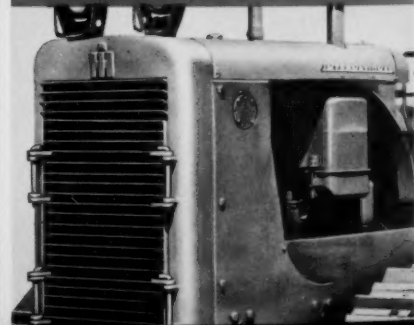
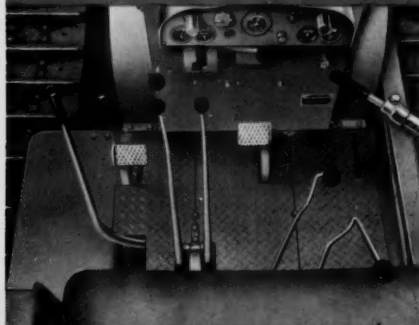
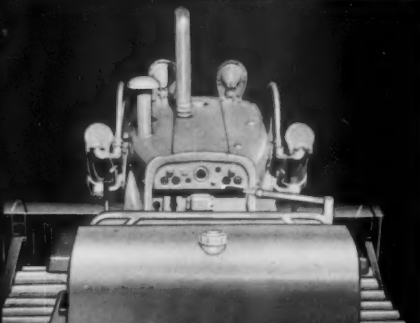


TD-14 (series 142), 78.5 drawbar hp; weighs 21,095 pounds (without equipment). Features "new look" engineering, job-speeding visibility, new equipment-carrying and operating strength. All-weather electric starting, standard equipment. It's a fast, responsive, big-capacity dozing tractor. Powers $2\frac{1}{4}$ cu. yd. International Drott Skid-Shovel or Four-In-One; 15-ton capacity Superior Pipe-Boom; other similar-sized equipment.

Central Tower Visibility adds operating efficiency! See how new International crawlers are streamlined for complete job-control visibility. Seat is empty high to provide full view of equipment, terrain, and variations requiring operator action, to maintain efficiency.

Clean, safe deck cleared for action! Look down on that safe, clean, flush deck—a platform for full production. The wide, man-size seat is fully-adjustable, foam rubber padded. Instruments centralized for one-glance check-up! Even a cigarette lighter is provided, to prevent needless stops!

Pressurized Closed Cooling System for Positive Performance Protection! New pressurized cooling systems provide fast warm-up under thermostatic control—and positive ideal temperature control with forced circulation through full-length jackets. That aids clean combustion, guards oil film strength, protects performance. Radiator core assembly is easily-removable, without disturbing radiator guard or mounted equipment.

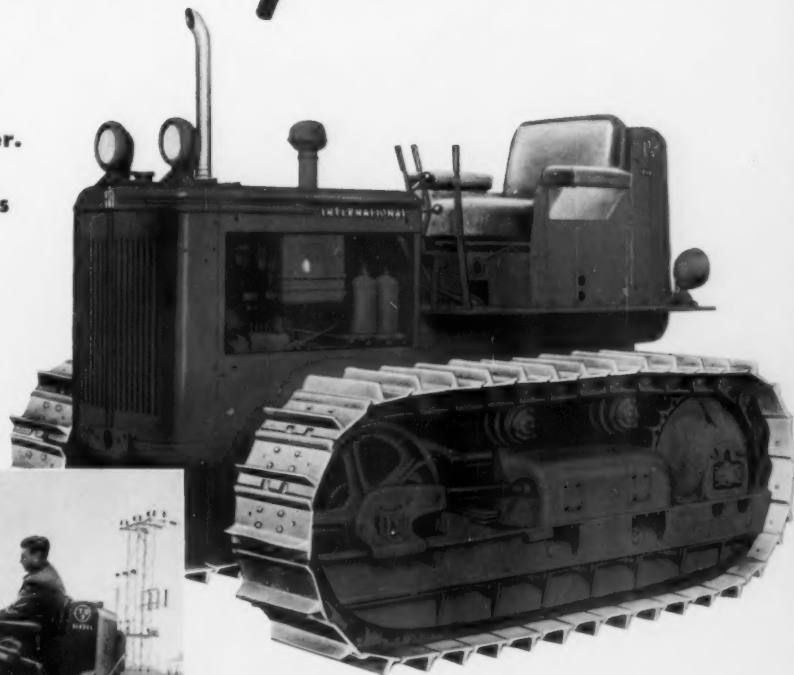


Give you Bonus horsepower— on your jobs, control your costs!

**66 Net Engine Horsepower.
In International Drott
Machines, Engine develops
71 Net Horsepower.**

91 Series

**TD
9**

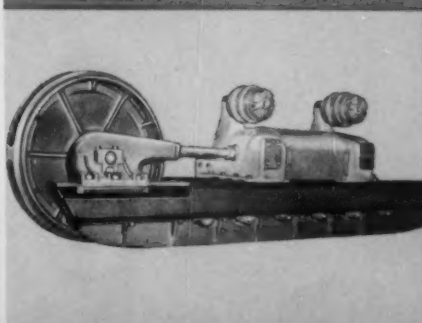
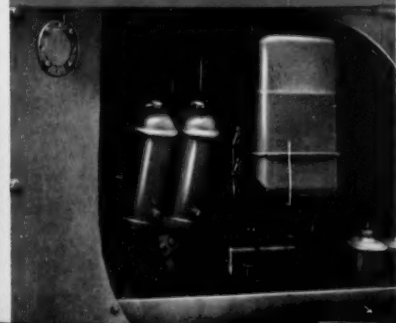


TD-9 diesel, (series 91), delivers 54.5 drawbar hp—up 32%. Operating weight (5-roller model), without equipment, 12,000 pounds. Now up in a new heavy-duty job range. New power is backed by new power train and track frame strength, new operating and servicing ease. Powers International Drott 1½ cu. yd. Skid-Shovel and other equipment requiring similar power.

480-hr. full-flow lube oil filters guard bearings, cut upkeep! Every drop of oil on its way to lubricate moving engine parts must pass through these new abrasive-trapping micron-type filters—with the capacity, strength, and efficiency to give 480 hours of wear-fighting, upkeep-cutting duty!

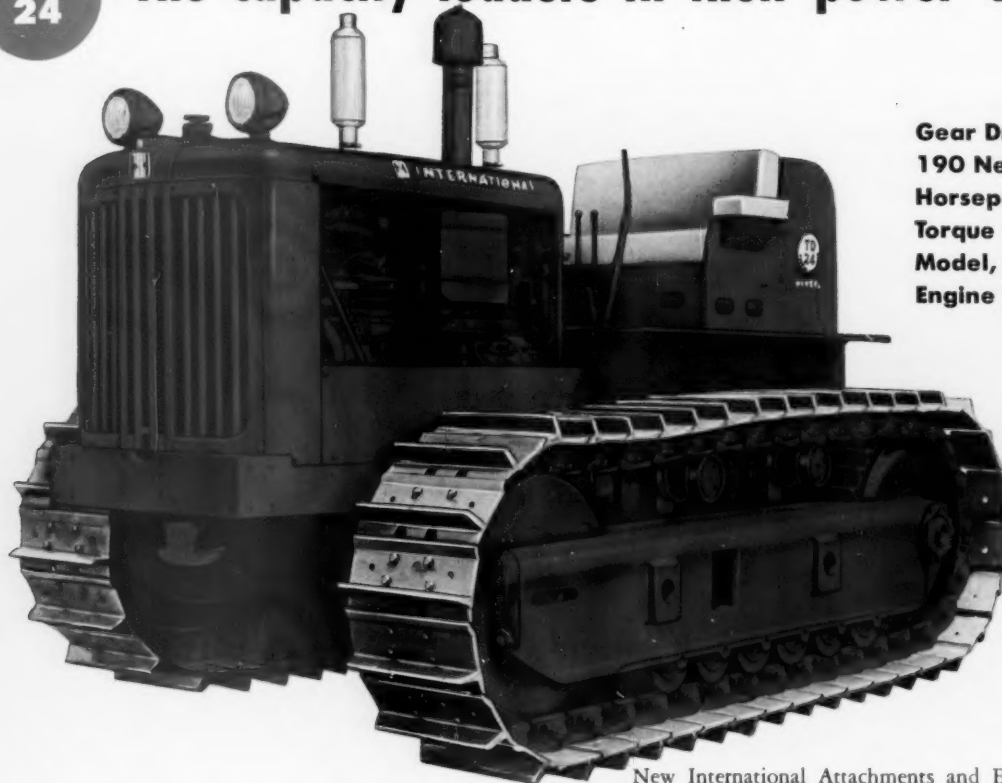
Hydraulic Power Steering Inspires Operator Cooperation! New hydraulic power steering of the TD-14 and TD-18 cuts operator fatigue—and along with the other big effort-saving advantages, makes it easier than ever to deliver full-capacity production! TD-6 and TD-9 have spring boosters to lighten the operator's job.

"Bridge-strong" track frames for "slam-bang" conditions! You are looking at the strongest track frame in the industry for crawlers of TD-18 and TD-14 size! Heavy steel box-section beams, weld-joined to heavy stress-relieved steel plates—and rigidly gusset-braced—they're your foundations for record-making "rough-and-tumble" performance!



**TD
24**

The capacity leaders in their power class



**Gear Drive Model,
190 Net Engine
Horsepower
Torque Converter
Model, 200 Net
Engine Horsepower**

Massive—with 43,080 pounds of rock-doing, scraper-pushing brawn (7-roller torque converter model)*—the TD-24 can give them all a lesson in operating ease, big capacity, and positive load control! Has instant high-low range and exclusive Planet Power steering to give you its tremendous *pushing, pulling, and lifting* power on any terrain—with responsiveness not available elsewhere! *Live power on both tracks, on every turn!* Backed by equipment engineered to match its strength and power!

*Gear Drive 7-roller model weighs 42,780.

New International Attachments and Equipment team with new bonus-powered crawlers to give you high-producing performance packages: 42 new Bulldozers, to fit your needs exactly . . . 4 new Drott Loaders, 1 to 3-cubic yard capacity . . . 4 new Superior® Pipe-Booms, 8 to 55-ton capacity; 3 job-proved PCU'S! . . . **Measure . . . compare . . . prove to yourself . . . new bonus-powered International crawler tractors beat anything else on tracks! Try this turnpike-paced new power for capacity, operator preference, profit potential. Ask your International Industrial Power Distributor for a bonus-powered demonstration to your specifications!**



International Industrial Power

INTERNATIONAL HARVESTER COMPANY, 180 N. Michigan Ave., Chicago 1, Illinois

A COMPLETE POWER PACKAGE INCLUDING: Crawler, Wheel, and Pipe-Boom Tractors . . . Self-Propelled Scrapers and Bottom-Dumps . . . Tractor and Rubber-tired Loaders . . . Diesel and Carbureted Engines . . . Motor Trucks.



Log loader owners!
**Working a hard 8 hour day...
 getting only 6½ hrs. output?**



Operator fatigue can cost you important money. Here's how to minimize it!

THINK about the job you're working now. How much *more* money could you make if operators—good as they are—suffered little if any end-of-the-shift-letdown . . . never had to climb out and unlimber "cramping" arm and leg muscles?

Fingertip-operated Link-Belt Speeder power hydraulic controls minimize fatigue

With Speed-o-Matic—the true power hydraulic control system—shovel-crane response is fast, positive, easy. So easy that operators are actually "eager" to push the rig to its limit—all shift long! And what a limit!

You've never seen any machine that can com-

pare with a Link-Belt Speeder for cat-quick agility and long-lived, bulldog stamina. Report after report shows these rigs account for up to 25% or more output per shift.

Seeing is believing

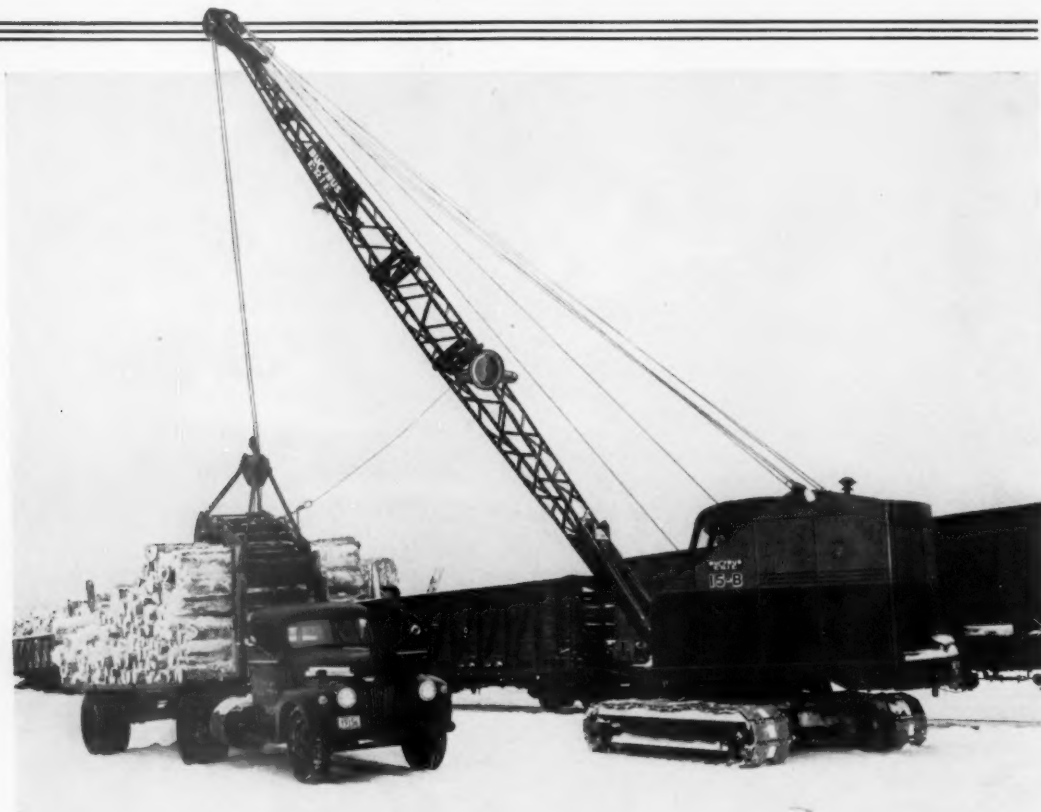
The precision construction, the quality materials and the advanced engineering that have gone into today's Link-Belt Speeder speak for themselves. All we ask you to do is see your distributor and judge for yourself. Be as critical as you like! No shovel-crane on the market today—crawler or rubber-tired, ½ to 3-yd, 8 to 60-ton capacity—can compare. Visit your distributor today or write for literature—LINK-BELT SPEEDER CORPORATION, CEDAR RAPIDS, IOWA.

1A-034

LINK-BELT SPEEDER

Builders of a complete line of crawler and rubber-tired shovel-cranes.

HERE'S OPERATING EASE to highball your loading operations



The remarkable operating ease and accurate control of Bucyrus-Erie cranes can help you step up your pulpwood operations. Here are a few reasons why:

Machine responses are smooth. Clutches are specially designed for smooth application of engine power. They are self-adjusting to provide uniform response under a wide range of weather, temperature, and dust conditions.

Swing is fast. Because Bucyrus-Eries are unusually well-balanced, there is no need for heavy counterweight. Upperworks starts into swing easily and stops smoothly.

Boom hoist is instantly available. Popular 15-B and 22-B models feature fully independent boom hoist. All the operator has to do at any time is to engage

the boom hoist lever and the boom starts to move — no tricky interlock with other functions.

Operator has positive control of the load. Power-controlled lowering of the boom is built right into the 15-B and 22-B — is not a costly optional attachment.

You can put your Bucyrus-Erie cranes to work digging, too. They are fully convertible to shovel, dragline, clamshell, or dragshovel operation. For illustrated information, see your nearby Bucyrus-Erie distributor.

114E55

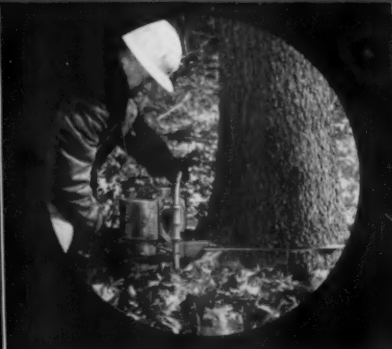
**BUCYRUS
ERIE**

South Milwaukee
Wisconsin

75

YEARS OF SERVICE
to Men Who
Shape the Earth

**New
HOMELITE
EZ**



**...the Direct-Drive CHAIN SAW
with ALL of the features YOU want**

**Only 19 pounds
Full 5 Horsepower
New Low Cost
Faster Cutting Speeds**

AND WITH THE NEW HOMELITE FLOATING POWER, you'll find handling ease you never knew before. The all-angle, any-position carburetor gives you full power cutting — whether you're felling, bucking, notching, limbing or under-cutting.

Floating Power lets you cut with less effort, less fatigue than any other chain saw. Because the Homelite EZ weighs only 19 pounds you can carry it anywhere. Its full 5 horsepower cuts through 8" Oak in 5 seconds and 18" Pine in 14 seconds. And the three bar sizes — 17", 21" or 25" will handle trees up to 3 feet in diameter.

The EZ brings you Homelite dependability at a new low cost — not just a low initial cost, but also lower maintenance and operating costs than any other direct-drive chain saw.

See this new floating power now! Try it and you'll know why the Homelite EZ offers easier cutting, faster cutting, more profitable cutting for your dollar.

Ask your Homelite dealer for a free demonstration. Also ask about the convenient time payment plan.

FREE!

Win a Homelite

24 Homelite EZ chain saws being given away each month. Nothing to buy. Nothing to write. No obligation. Just ask your dealer how you can win. See him today!

**A Complete Line of Chain Saws
for every cutting job.**



Manufacturers of
Carryable Chain Saws • Pumps • Generators • Blowers

HOMELITE

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A DIVISION OF TEXTRON AMERICAN, INC.

Canadian Distributors:

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VIRGIN PINE STAND in northern Maine is typical of Northeastern forests, where greater utilization and integration are pushing expansion of pulp and paper mills in this region.



INCREASED HARDWOOD USAGE is foreseen by TRR to meet anticipated increased requirements. Stands of hardwoods such as this one in Pennsylvania will help provide pulpwood of the future.

A "Free-for-All" on USFS Forecasts

American Pulpwood Assn. stages one of significant discussions of Paper Week, criticisms and praise of TRR

● For the pulp and paper industry's long-term outlook and the future of its relations to the general public and the government, there perhaps was nothing more important that happened during Paper Week than the open forum panel over the latest U.S. Forest Service crystal-ball pictures of the forests and how they will be used in A.D. 1975 and A.D. 2000.

The American Pulpwood Association performed one of the most constructive services of the whole week, by staging its "all-out" discussion of TRR, in which U.S. foresters, state foresters, college economists, industry foresters from South, Far West, Lake States and Northeast had their chance to boost and condemn the various features of TRR. Each had different viewpoints.

It is very important to point out that this was a "friendly" discussion—albeit on a subject loaded with dynamite for this industry. The USFS itself invited criticisms, promising revisions of TRR; it will be sole judge of what

revisions to make. The APA leadership and its secretary, W. S. (Bill) Bromley, took the USFS at its word.

APA TAKES POSITION—In one of the first reports of the APA meetings, its own position was revealed: It described the report as the best of the USFS reports of this kind over past decades, indicating a better forest situation, but held that it was still inadequate, needed better explanations for its statements, and that some weak data or assumptions should be deleted from the final TRR.

"THROW OUT A.D. 2000 FORECASTS"—Most speakers and experts at Paper Week were agreed on one point—that any forecast by anyone for A.D. 2000 was virtually worthless. Forty-five years from now is too far to predict the existence of forests or their uses. One president of a big pulp company remarked to PULP & PAPER, "Who can say for sure we'll have any forests? The Atomic Age

may end them forever." This was, of course, a most extreme comment, yet the chances of a 45-years-ahead prediction coming true was so remote, that many others held anyone with an "opium pipe" might come even closer than USFS.

CONTINUING SURVEY USEFUL—One of the suggestions that drew wide approval was made by Dr. Albert C. Worrell of Yale School of Forestry.

"These reports should not be 'one-shot' studies, 4, 6 or 8 years apart, and aimed into only the distant future. We need a continuous study, using improved tools, giving time-stream data on potential growth and demand for short intervals. It should be based on different assumptions and which are most likely to be true. Such surveys would be more useful, year to year. Supply and demand may not always balance at the best level. The USFS should warn us if a substitute may unjustifiably replace wood, where and when. It should deliberately make

us set our sights higher.

Dr. Worrell pointed out that the 1975 Forecasts were within 1% of the much-discussed Stanford Research Institute forecasts of forest supply and needs in 1975, but there was no comparison that could be made with 2000 forecast.

Most speakers stressed their desire to help USFS improve and correct the preliminary TRR. It now remains to be seen how far USFS will go in accepting their advice.

ACCORDING TO THE GOVERNMENT

In introductory remarks for the government, H. R. Josephson, of USFS, said the pulp and paper industry owned 5% of commercial forest lands in the U.S. in 1952 (latest data), close to 5,000,000 acres. Much additional timberland has been acquired by this industry since then. Industry as a whole owned 13% in 1952.

According to USFS 80% of public lands and 77% of industrial forests are in high "productivity." However, said Mr. Josephson, the Southern pulp and paper industry's "high productivity" is "way above" this average. Farms, woodlots, etc. were only about half as productive.

He stressed that hardwoods now comprise half of U.S. forests, according to USFS count. And he explained that pulpwood cannot be considered separately by USFS, as the destined use of much timber is uncertain until after it is cut.

"Pulp industry strategy should be to exploit timber in the least competitive areas," said Mr. Josephson. "For example, there are 100,000,000 cords of salvageable timber in the Far West." The price and terms set by the USFS on these vast forests of dead and dying timber has, however, caused several paper companies to abandon ideas of building mills to use them.

He stressed "surplus" hardwoods—

PULP & PAPER WAS FIRST

PULP & PAPER was the first—and until recently—the only publication to publish criticism as well as praise of USFS Timber Resource Review forecasts and appraisals.

Many readers praised PULP & PAPER for giving the industry point of view. Newspapers, generally, and other publications merely published verbatim the government's releases. For P&P's comments on TRR see Dec. 1955 issue, beginning on page 69.



APA EXECS. Retiring Pres. of American Pulpwood Assn., LOUIE J. FREEDMAN (left), Vice Pres., Penobscot Development Co., faces incoming President, LUCIAN A. WHITTLE, Gen. Mgr., Woods Div., Brunswick Pulp & Paper Co. "Middle man" is W. S. "BILL" BROMLEY, Exec. Secy., APA.

New APA President a Leader in Woods Industry

Lucian A. Whittle, general manager, woods division, Brunswick Pulp & Paper Co., is new president of the American Pulpwood Association. His 15 years in the pulpwood industry have earned for him recognition as a pioneer in new techniques of wood harvesting and wood handling.

For instance, here are three of his more significant contributions to this industry:

- The pulpwood pallet, conceived by Mr. Whittle in 1948, is now in wide use in the South. One pulpwood producer, interviewed on a cutting operation by PULP & PAPER, asserted that the pallet improved the efficiency of his operations by 50%.

- Stabilization of wood procurement and the concept of pulpwood production as a regular, year-round occupation, were innovations of Mr. Whittle at the Scott-Mead jointly owned Brunswick Pulp &

Paper mill some 10 years ago. (Article on this program and use of pallets was featured in P&P, Nov., 1955.)

- The first application of Continuous Forest Inventory in the industry was by Mr. Whittle at Brunswick sometime in 1950. Says Mr. Whittle, this gives us a continual measure of forest performance as a guide to improving forest growth.

He has long pushed intensive land management, what he terms the factory concept of land management.

Brunswick-born, Mr. Whittle is a 1933 honor graduate of the Univ. of Georgia. In Brunswick, he is a past president of Rotary, past president of Brunswick's Young Men's Club, and organized the first community chest drive there.

He is a past director of Southern Pulpwood Conservation Assn., director of American Pulpwood Assn. and helped to form APA's technical committee.

most of it "the softer hardwoods." He listed unused logging and coarse lumber residues. In the South, logging residues alone totaled 9,100,000 cords, of which 5.8 million was in hardwoods. He gave about the same figure for the Far West, mostly softwood.

"It looks as though we shall have to rely on hardwoods more than we have in the past," Mr. Josephson emphasized that "these dates (1975 and 2000) are only 20 to 45 years away." The specific figures, he cautioned, may not be as important as the direction.

AFA LEADER FEARS PUBLIC DEBATE

Leading off the panel discussion was Lowell Besley, for the American Forestry Assn. It will be recalled USFS chose the AFA convention in Portland, Ore.—with which it has strong sentimental ties—as the setting for the unfolding of TRR. Mr. Besley immediately made clear that AFA

wholeheartedly approved the new TRR. "It is needed for the public interest, is more complete and accurate than any before," he said, and added the warning that TRR was issued for everybody—not just for industry.

His contention that "large segments of the public prefer to believe" in the "outmoded" dogmas of Gifford Pinchot seemed to be the key statement of his address. Some conservationists haven't kept up with the times, he warned.

The impression he gave was that it is important to keep "the public" happy over the forest situation, even if the facts used may be extremely doubtful. "Haggling in public over technicalities will only do harm," Mr. Besley cautioned. But regardless of his expressions of concern, critics of TRR were not deterred from stating frankly what they didn't like about it.

He quoted Richard E. McArdle,

U.S. Chief Forester, as saying that we are not faced with a timber shortage in the U.S.

WHERE STATE FORESTERS STAND—The position of the state foresters was presented by Al D. Nutting, president of State Foresters Assn. and commissioner of the Maine Forest Service.

He said "better cooperation in providing data could have made it more useful" and held that more good could be achieved in the future "if we all pull together." The state foresters' complaint has long been that the federal foresters have not done this.

However, Mr. Nutting reported, several state foresters said the new TRR would be "helpful," indicated a "favorable trend," and emphasized "the need for forest protection." "The big job is in pulpwood," he said.

"PUBLIC'S OVER-RIPE OWNERSHIP"—A major point made by Carl Sahlin, manager of the timber dept., Puget Sound Pulp & Timber Co., and spokesman for the Far West industry, was the vast dying forests in the Far West which are not even counted—in "locked up" forests. He repeatedly used the phrase "the public over-ripe ownership" in referring to the 55% public ownership in the Far West. He pointed out that a "false scarcity" of timber is pictured by USFS because only 20% of this public domain is being used.

As a result, the Far West industry is now converting too rapidly from old growth to new, vigorous young growth—"liquidating this young growth just when it is reaching maturity."

"We must have more sound use of public timber," declared the Washington State man, himself a graduate forester with experience directing vast timber holdings of Puget Pulp.

He noted that 2 billion ft. of timber in the Pacific Northwest alone was lost as a result of old age, inaccessibility, insects, fire, etc., which he said was 50% of the entire cut of that relatively small area, compared to the South. About 25 million acres, over 60% of all U.S. softwood, is there, and 16% goes into pulp.

NO PINE SURPLUS IN SOUTH—Speaking for the South, William J. Bridges Jr., Union Bag & Paper Corp., said "the day is long past since one could roll out a map (South) and say here's a good mill spot, it is so many

miles from this and that mill."

He declared that lumber still uses twice as much Southern pine as the pulp mills. Pulpwood is "just part of the complex whole." He warned that the big question is how does this industry stand in the South.

From here on in, he stressed, wood supply is the first consideration in planning a new mill; water, etc., are secondary. The day is past, he stated, when we can say "come and build a mill in the South—we have a surplus of wood." There is no surplus of pine in the South, he warned, adding that the industry must do more in the South, and must be cautious of any expansion there.

NORTHEAST SPEAKS UP—Dwight Demeritt, vice president of woodlands operations, Dead River Co., described as an expert on the Northeast industry, said that the Forest Service has done a very creditable job. But Mr. Demeritt said it would have been much wiser and more interesting if the FS had completed the survey which it was authorized to do under the McNary-McSweeney Act.

The situation is better than it was 20 years ago, stated Mr. Demeritt, adding that the pulp and paper industry is reasonably well supplied with timber.

The main problem in the Northeast, he advised, is that forest management practices need to be improved in small



FREE-FOR-ALL REFEREE and some contestants (l to r): H. R. JOSEPHSON, U.S. Forest Service, "Specific figures may not be as important as the direction." G. B. AMIDON, M&O Paper Co., Chairman of TRR Panel. DR. ALBERT C. WORRELL, Yale School of Forestry, "It is dangerous to conjecture. Answers depend on assumptions you make."

holdings. While timber supply appears adequate from TRR, he said, it would be a mistake for the industry to sit back and be complacent. Just because TRR says the Northeast is good, he warned, is no reason for us to be complacent about it.

LAKE STATES WILL BE INDEPENDENT—Speaking for the Lake States, Frank N. Fixmer, Mosinee Paper Mills Co., said that consumption of hardwoods has been expanding, particularly in the North. There is also a future trend toward hardwoods, he said.

Aspen has become a leading species in the Lake States, he advised, and added that Lakes States foresters say that pulp mills there will become independent of wood sources outside that region.

TRR—How Accurate is It?

Ed Gayner tells top management at APPA "Open Industry" meeting that TRR is a good starter but no panacea

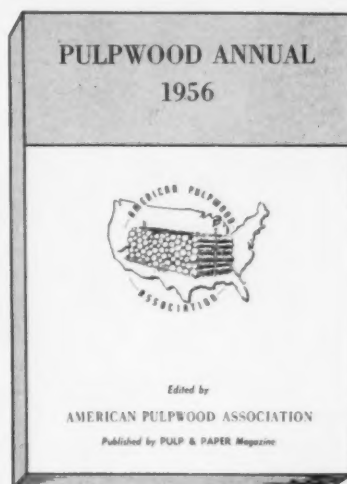
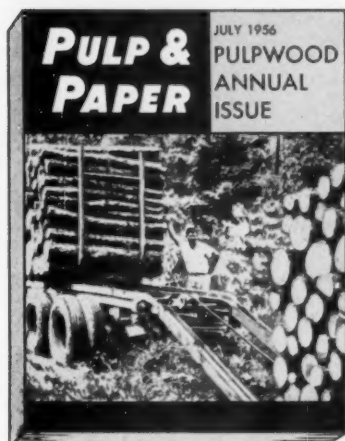


EDWARD GAYNER III, President, Brunswick Pulp & Paper Co. "TRR offers a good starting point for where and how we should go—but it is not a panacea."

• What is TRR and why is it on the lips of everyone in the lumber, pulpwood, pulp and paper industries? To learn the answer top management from these industries literally jam-packed the American Paper & Pulp Assn's. Open Industry Meeting during Paper Week. It was probably the best attended of these annual meetings in which the industry tells the public what's on its collective mind. Certainly, TRR was.

To explain in non-technical terms just what TRR is and to comment and criticize not only the TRR but also the industry itself, APPA selected a top-notch Southern executive, Ed Gayner III, president of Brunswick Pulp

GET THE MOST FOR YOUR MONEY IN THE PULPWOOD FIELD ADVERTISING



Use Regular
Pulpwood Section
of All Monthly
Issues . . .
Schedule July
Insertion to Run
Also in 1956
Pulpwood Annual

PULPWOOD SECTION

Almost 10 years ago, PULP & PAPER established the Pulpwood Section as a regular feature of its monthly issues. Recognition of the integration of interest in pulpwood production with the manufacture of pulp and paper has won advertiser acceptance, with the result that the most important suppliers of mechanized equipment and services for this field are now carrying regular space in this section.

PULPWOOD ANNUAL

A consequence of this pioneering move was an invitation from the American Pulpwood Association to PULP & PAPER to initiate the publication of a Pulpwood Annual which would be edited by APA. In 1956 the 4th such Annual will be published, incorporating the latest and most complete information on pulpwood production and mechanization. It will be printed first as part of the regular July issue, and then reprinted with its advertising for separate distribution by APA.

PULPWOOD SECTION CIRCULATION

Subscribers to PULP & PAPER include important management men who direct the policies of companies owning more than 30 million acres of U. S. forest land. Woodlands managers, yard superintendents and foresters of these companies are PULP & PAPER subscribers, as are most of the larger pulpwood producers in the country.

PULPWOOD ANNUAL CIRCULATION

All paid subscribers to PULP & PAPER (almost 7000 in number!) will receive the Pulpwood Annual as part of the regular July 1956 issue. In addition, 3000 copies of the separately-reprinted Annual portion (with its advertising) will be distributed by the American Pulpwood Association to its membership, pulpwood producers and other industry factors.

ADVERTISING RATES . . .

	Number of Insertions Per Year		
	*13	*7	1
Full Page	\$250	\$300	\$350
Two-thirds Page	225	270	315
Island Half Page	200	240	280
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& Paper Co., whose mill at Brunswick, Ga. has pioneered many outstanding pulpwood harvesting, handling and management practices. Among these are the pallet. Continuous Forest Inventory and stabilization of pulpwood production as a regular, year-round occupation. (A report on Brunswick's pulpwood procurement program was featured in P&P, Nov., 1955.)

LOCAL PROBLEMS NEED FIRST ATTENTION — A most important point, cautioned Mr. Gayner, is that TRR is a comprehensive survey of the whole continental U.S. and must, therefore, be very general. "Those of us who build and operate plants that use wood from the forests must remember this at all times," he warned. This was definitely his main theme—that special hard work and study should be given to local problems and not to the general overall survey of TRR.

TRR says that growing stock shows a small increase since 1945, he stated, adding the warning that "the 1952 survey cannot be compared with earlier surveys because utilization standards have changed." "Land classifications . . . intensiveness of the survey and sampling methods have changed. . . . there have been gains in some regions and losses in others . . . It's comforting, of course, to find the overall picture indicates we are at least holding our own," he explained.

"QUALITY" NOT PRIMARY—TRR says timber quality outlook is unfavorable. He discounted its apparent seriousness by explaining that logging practices have always high-graded and, as a result, the large, slow growing, sound timber, producing high grade lumber, has become scarce. On the other hand, countered Mr. Gayner, we have made great advances in technology and, "quality as we once knew it, may well not be the prime factor in timber supply that it once was. Research has done, and is doing much for our lumber industry and much more for our pulp and paper industry," he claimed.

TRR says timber growth is increasing and Mr. Gayner remarked "this is a dangerous statement if taken by itself." "There is no element of timber mensuration as difficult to measure and as poorly understood as growth. Yet in all findings spelled out in TRR,

this statement seems to have received loudest acclaim. It's particularly dangerous at this time," he warned.

EXPANSION ALARMING—To satisfy current and future pulp and paper requirements, he stated, "expansion of manufacturing facilities on an alarming scale is either in progress or is planned. The big portion seems to be aimed at the South, where the trend indicates that from 60% to 65% of the country's pulp and paper production is concentrated," he said.

Citing an example, Mr. Gayner explained that a recent study of pulpwood requirements indicates that 63% of pulpwood required in the South will come from Alabama, Florida and Georgia. "This would be a timber drain out of all keeping with their areas and potential in relation to the entire U.S.," he warned.

RAT RACE FOR MILL SITES—"If we get an excess of drain in this or any other area," he cautioned, "the responsibility will not be on the Forest Service's shoulders. TRR is a general survey and does not say we should provide manufacturing facilities in any area to overdrain the forests. Should this happen, (and this is probably the key point in his talk) the responsibility will rest squarely on the industrialists taking part in what I think may well be called a rat race for mill sites without due regard for the all important consideration, timber supply. We might very well see, if we are not wise, ghost pulp mill towns. It can happen," he warned.

A NEW CONCEPT — TRR has brought out a new concept for estimating losses due to various destructive agents—"growth impact," he explained. "Growth impact is made up of two elements: mortality, meaning death of timber from natural causes, and a growth loss which comes about by (a) reduction in growth due to reduced tree vigor, increase in amount of cull, site deterioration, etc.; (b) losses in growth as a result of delays or deficiencies in stocking, resulting from destructive agents, and (c) losses in potential growth and prospective yields due to killing of trees below merchantable or measured sizes."

SERIOUS INDICTMENT — "TRR says we have inadequate stocking," reported Mr. Gayner, stating that 115,000,000 acres, or about 1/4 of com-



Besley Going to Canada

LOWELL BESLEY, executive director of American Forestry Assn. at Washington, D.C., since 1953, and speaker at American Pulpwood Assn. meetings at Paper Week, will return to Canada July 1 to become chairman of the woodlands research department of Pulp and Paper Research Institute of Canada in Montreal. Mr. Besley was dean of the forestry faculty at Univ. of Brit. Columbia before taking his post in Washington. Baltimore-born and a graduate of Cornell and Yale, Mr. Besley spent 15 years teaching forestry at Penn State, West Virginia U. and Duke Univ. before going to British Columbia.

mercial land in the U.S., are less than 40% stocked and, in fact, some 42,000,000 acres are less than 10% stocked. "Of the balance, or 369,000,000 acres," he continued, "an undetermined acreage is not better than 40% to 70% stocked. This condition is more serious in the East and worst conditions are in the Southeast and Lakes States," he claimed.

This is a serious indictment against the industry, said Mr. Gayner, voicing the opinion that there are no extenuating circumstances but perhaps one could be found in a study of commercial forests and their condition.

CONTROL RESTS WITH OWNER

—Quoting TRR, Mr. Gayner said, "What happens to timber resources, currently and in the future, depends on individuals who control private timberland and on policies of government agencies, which control publicly owned timber lands. When an owner is disinterested or ill-informed, other groups, such as timber buyers, loggers or tenants, exercise great influence and, in some instances, control for all practical purposes what happens to timber resources on a given property. Fundamentally, the ultimate control rests with the owner."

An important conclusion to be drawn, says Mr. Gayner, is that the poorest forest condition is to be found on the farm forests and other small forest ownerships. "These two classes are controlled by nearly 4.5 million

private owners and account for 60% of the nation's commercial forest land. Although nationwide, this condition applies more to the South."

NURSERIES WILL BE HARD PRESSED—What does TRR say about forest planting, asked Mr. Gayner, answering by saying the TRR points out the annual rate of planting has increased 5 to 6 times in the last 25 years, with expectations that it will increase more. "Don't forget this," he urged, "that the FS indicates 50,000,000 acres now need to be planted to render them productive within a reasonable time. To do this certainly will require doubling, tripling or quadrupling the output of nurseries."

BIGGEST JOB—Mr. Gayner judged that the biggest job, as indicated by TRR findings, is rehabilitation of lands owned by 4.5 million land owners. "Much has been accomplished," he explained, "but it is apparent that in the main, we have failed to accomplish enough."

As a starting point, Mr. Gayner suggested "less lip service and more sincerity on the industry's part, whose tenets as regards forestry practice are good, but so often do not reach the little fellow's wood lot."

As to controlling natural destructive agents, he urged better forestry and more of it, coupled with better utilization of (a) timber cut and (b) timber killed by various destructive agents.

NO FURTHER ACQUISITION OF COMMERCIAL LANDS—As to public ownerships, Mr. Gayner questioned the use to which they are being put, that they are being used to best advantage. "In the light of the country's current and anticipated timber requirements, there should be no further acquisition of commercial forest land by government agencies, if such means taking these lands out of timber production and out of use by industry."

FORCED TO FIND FAULT—"Finally," said Mr. Gayner, "let us remember that TRR is a very excellent, general report of our forestry resources, of a condition of the forest, and of other pertinent data relative to the forest on a national scale. Let's not be foolish and try to apply such estimates to an area, say, of a few hundred thousand acres. Let's give

high level attention in our industry from the highest echelon of the industry to the work of the forester. He is the expert who should be called upon to interpret and apply the findings of TRR."

BLOCK NEW PROPOSALS—"Let's give impetus to rehabilitation of lands in small ownership class. Let's extend our influence into public places and

get better use of lands now, or in the future, in public ownerships. Let's give immediate and full attention to the problem of insect and disease control. And let's block any new proposals for public acquisitions.

Let's widen, strengthen and increase our support of the various agencies, such as forestry assistance programs, public cooperative programs, seedling distributions, university extension and youth organization programs and let's run the risk of going completely overboard in encouraging, financing, stimulating and supporting research programs of all kinds, looking to better controls, better silviculture and better forestry."

Pulpwood Industry Reply

Representative views of APA members on TRR and how it may be improved or amended presented to USFS

In issuing its preliminary draft of the Timber Resource Review last October, the U.S. Forest Service asked for comments. Before taking the USFS at its word, the Forest Industries Council, a coordinating committee of the American Pulpwood Assn., the American Paper & Pulp Assn. and the National Lumber Mfrs. Assn., retained Dr. John A. Zivnuska, associate professor of forestry at the U. of California, to prepare an impartial study of the TRR.

Using this study as a guide, W. S. "Bill" Bromley, executive secretary of the APA, submitted a "consensus of thinking of woodlands managers, foresters, and representatives of top management in the pulp and paper industry as represented by the majority" of APA members.

"In general," advised Mr. Bromley, "we feel that all major conclusions and recommendations on TRR as developed by Dr. Zivnuska in 'Timber, Today and Tomorrow' should be carefully weighed and acted upon by the USFS."

Essential features of APA's stand follow:

GENERAL APPROVAL—The TRR is the best overall survey of the Nation's forest resources that has been made to date.

The record of progress in forestry developed by this survey shows that the current forest situation is much better than previous surveys had predicted.

Estimates of forest areas and inventory volumes are probably the most reliable to date and are presented in a form by states and regions that will be more useful than previous surveys.

The main aspects of projection of wood requirements to 1975, based on the "lower level of requirements" without the "margin for contingencies," seems well substantiated.

NEED CHANGES, EXPLANATIONS—There should be more facts on the inadequacy of data being used. It should be stressed that the more complete, up-to-date Forest Survey data were available for only 52% of commercial forest area, and that for the balance of the area, in various aspects of the report, data were based on results which range from scientifically designed sampling surveys to judgment of field men, or outright "guess estimating."

The terms "growth impact" and "growth loss" are confusing and their use in the TRR is not made clear. They seem to be estimates of the loss in gross growth which might have been obtained if destructive agencies had not been present. This is a highly theoretical concept.

The "adjustments" of previous surveys by the Forest Service should be explained more fully and not used apart from the figures published previously.

Changes in timber quality are presented as though a measure of them is well substantiated when as a matter of fact, they are supported by some of the weakest data in the Survey.

Most projections of growth and requirements for wood in the future in TRR emphasize what may happen by 2000. Most estimates of forest growth are not regarded as reliable beyond 10 to 20 years.

The "margin for contingencies" which is added in the TRR to the

future cut under the "lower level of requirements" in the future should not be used.

There does not seem to be any logical reason why the Plains area, which includes West Texas and Oklahoma, should be included in the North region in the summary tables.

TRR has developed estimated demands for pulpwood in the future but contributes little directly to our knowledge on existing volumes and projected growth. Myriads of figures are available in terms of cu. ft. volumes; useful only after we have laboriously deducted the volumes in sawtimber sizes, estimated what will be used for other forest products and made other estimates and adjustments.

INSUFFICIENT RECOGNITION—

Industry assistance programs of industry associations are, in general, covered well in some sections of TRR but not in others. The growth and effectiveness of these programs is one of the outstanding forestry developments of the past 10 years and should get more recognition.

Little credit is given to individual pulp and paper and lumber companies for the forestry assistance programs conducted by their own staff foresters. This work has progressed rapidly and is very effective.

While the TRR mentions steps that can increase rate of forest growth, one of which has to do with improving growing stock on farm woodlots, there is not sufficient recognition that no class of forest ownership has done more in providing usable forest products than the woodlot owner.

USFS should note more clearly its efforts to open all legitimate doors to its own "tree bank" of uncut unthinned stands as rapidly as possible on National Forests and provide additional forest growth by reducing to a minimum the loss by natural suppression, inherent in any forest not actively managed.

RECOMMENDED DELETIONS—

The productivity index aspect of TRR adds nothing and should be deleted.

"Needed" growth and "needed" inventory are new terms and concepts applied in a manner that is confusing and should be deleted. By their definition in the TRR, it is obvious that "needed growth" is not growth at all, but actually another term for potential future demand for timber.

"Realizable" growth is another confusing term. This should be termed "management goals," "growth goals" or "growth objectives" but not "realizable growth" as it is debatable

as to whether it is realizable, and it is not growth at all.

The "Upper Level of Requirements" introduces a completely unrealistic set of projections of demand into the future that cannot be justified in the face of more realistic and better substantiated lower level of requirements in TRR. The upper level concept should be deleted.

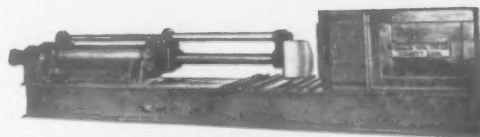
REWRITING FINAL REPORT—

There is a singular lack of coordination between the manner of writing and presenting the main findings of TRR in Chapter I compared with the order of subjects and chapters in the

Index. In the latter, the findings of the TRR are presented in logical sequence. This makes sense. This same logical order should be followed in a complete rewriting of Chapter I.

There is a wealth of good material developed by the Forest Service in TRR. These comments are made with the hope that the important facts regarding our forest resources shall be presented in a manner that will make them most useful. A carefully revised report, can make the Timber Resource Review a valuable basis for planning for expanded forest products and expanded forest growth in the future.

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SPECIAL PULP & PAPER FEATURE

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How to Put On

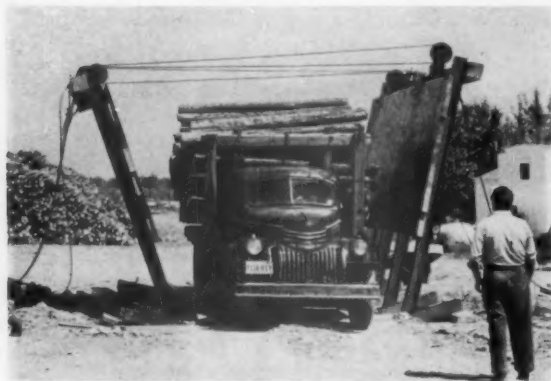
"The Pulpwood Squeeze"

Ed Anderson, district forester at Kimberly-Clark of Minnesota, Inc., has invented a pulpwood press of steel plates and hinges sewed together with cables.

The object of this press is to speed up the handling of pulpwood from the banking ground to the barges in the harbor at Grand Marais, Minn. With the use of this press, no top loading is necessary when the wood is stacked on the trucks by the clam. When the loaded truck stops between the jaws of the press, a small tractor pulls up the cables, which pushes in

and straightens the ends of the wood. If it is a long trailer, the process is repeated on the rear pocket. It takes only a few seconds to get a straight-sided, tight load. The load is then bound so it stays in place while on the highway.

Through the use of this press, the crew was reduced by three trucks and drivers, two full time top loaders were eliminated, and the loading increased from 600 to 800 cords per day. Six trucks can now haul more than nine did previously. The drivers move the trucks back and forth under the clam. The most dangerous job in handling pulpwood—top loading—is done away with, an achievement in safety and cost.



LEWIS MONCHAMP of Kimberly-Clark of Minnesota Inc. is signalling the truck driver ahead so as to center the load between the press plates.



THE "SQUEEZE" IS ON. Mr. Monchamp watches as the press plates close in on the loosely piled load and make a straight-sided, tight load.

Blyth & Co. May Buy Big Timber Companies

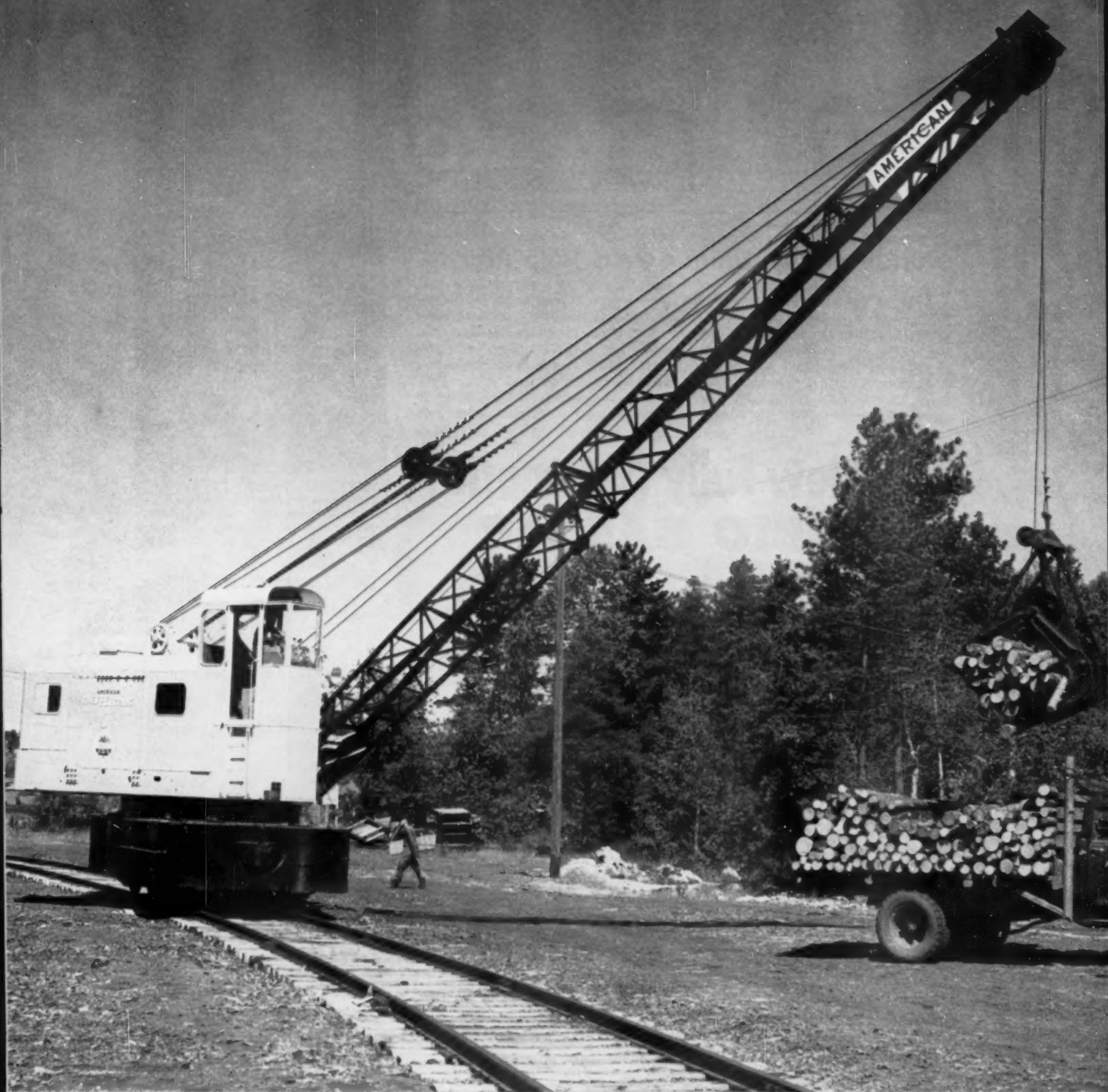
The mid-1950's may be referred to in retrospect as the period when financial institutions and industry in general became aware of values represented by timber, timberlands and forest products plants in Pacific Coast states. The present tempo of reported purchases and nibbles indicates this may even be referred to as "the merging Fifties."

By early March, Blyth & Co. received an option to buy the 53-year old firm of Dant & Russell, Inc., Portland, Ore., which exceeded \$100 million annual sales last year for the first time. Similar arrangements were in the making for Blyth's acquisition of Coos Bay Lumber Co., plywood-hardboard-lumber manufacturing firm, headquartered at Coos Bay, Ore., 45% of which stock is owned by Dant & Russell. D&R also owns major stock of Fir-Tex Insulation Board Co. and has as wholly owned subsidiaries, Pacific-Atlantic Steamship Co., Pacific Transport Lines, Inc., and States Steamship Co.

A spokesman of Blyth & Co. reports that if the 152-day option is exercised it will be for Blyth's own account, rather than for a fourth party, and it is intended that productive operation be continued.

Cambio Barker to be Used at Green Bay Board Mill

A new 20-in. Soderhamn Cambio No. 52 barker will be installed to debark wood, primarily aspen, at Green Bay Paper & Pulp Co., Green Bay, Wis. The Cambio, a Swedish barker now made by Soderhamn Machine Mfg. Co., Talladega, Ala., derives its name because it removes bark down to the cambium layer, using a series of knives.



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Floridians Plan Unique Palm Pulp Process

Florida's palm trees may provide more than just picturesque backgrounds for the color pictures of tourists. They are coming into their own as a source of pulpwood.

At Okeechobee, Fla., Florida Palms, Inc., "is building a paper mill designed to produce 200 tons of un-

bleached palm pulp every 24 hours," Harry S. Getchell, Sr., president, and his son, H. S., Jr., vice president, told PULP & PAPER. They said projected plans also include production of bleached and purified pulps.

One by-product of the process is palm heart—considered a delicacy in

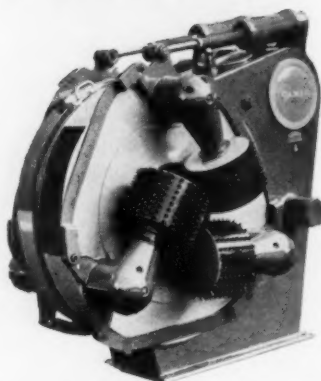


PALM TREE PAPER? Florida Palms, Inc., a new firm at Okeechobee, Fla., plans a 200-ton-a-day mill to produce paper and board from native sable palms. Officials claim entire process takes only 40 minutes, tree to paper.

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South America and sold as an exotic dish in some American groceries. Mr. Getchell said a packaging plant at Okeechobee will freeze and pack the palm hearts. It will also be sold for cattle feed.

According to officials of Florida Palms, Inc., there is ample palm pulpwood in the Okeechobee area to substantiate the 200-tons-a-day production. Also, says Getchell, the process can use other than just the native cabbage or sable palm. Date and coconut palm wood can also be processed.

Trees average about 30 ft. and are from 8 to 14 in. in diameter. They lack branches, knots and difficult-to-remove bark. Trees are also immune to insect destruction common in pine and hardwoods, said Mr. Getchell.

According to officials of the new company, palms are easily and quickly felled and can be cut into mill lengths in 8 to 10 sec. Tests showed the entire pulping and finishing process, from felled tree to finished board, may take only 40 min. and the pulp is free of fines without any special processing.

Samples of paper and board sent to PULP & PAPER have the appearance of kraft paper except that they appear softer. One example of 100% palm board was tough, break-resistant and hard to scratch with the fingernail, with a smooth, slate-like surface.

Missourians Want Trees

Forest tree seedlings have been in higher demand in Missouri this year than at any previous time, according to State Forester George O. White. Two million little pine trees were sold by March 1.

Canadian Firms Comment on B.C. Forest Future

When the several-month-long sessions of British Columbia's Sloan Forestry Commission come to a close, it is expected to have extensive factual background to guide future management of the province's forest resources.

Ten years ago Chief Justice Gordon Sloan conducted the first full-scale inquiry into the B.C. forest industry, resulting in a licensing system designed to guarantee continuing supply of timber. This licensing system has been particularly inviting to large companies in the pulp and paper field; and it has been criticized as giving too much of the forest into control of a few big companies.

During the present hearing, all major companies have submitted "briefs." No attempt can be made here to summarize them, but a few of the outstanding recommendations made by individual companies follow:

Powell River Co.: Issuance of forest management licenses should be on a contributory basis, crown and private owners contributing approximately equal amounts of timber. All present licenses should be reviewed to determine whether or not more timber has been included than the conversion plant requires.

Alaska Pine & Cellulose Ltd.: The duration of any license should be made conditional on the wood produced from it being continually used to make the greatest possible contribution to the area's economy. Any fear of log shortage by overcutting is not warranted. Annual cut in the coastal area alone can be increased by at least 1½ billion ft. annually through realistic rotations.

B.C. Forest Products: Public working circles should be extended as a means of developing crown timber on a sustained yield basis. In implementing long-term tenure policies consideration should be given to the claims of existing communities largely dependent on forest industry.

MacMillan & Bloedel: The policy of sustained annual yield should be maintained and extended throughout the province. No more forest management licenses should be granted in the Vancouver forest district (comprising Vancouver Island and the lower mainland coast). Logs from license areas suitable for peelers or good fir and spruce sawmill logs should not be used for pulp.

Crown Zellerbach Canada, Ltd.: A re-survey of existing forest management licenses should be made as soon as possible to insure that none is larger than required to supply existing

or announced plant requirements. More protection and encouragement are needed for independent loggers whose continued operations are essential. The license concept should be extended to provide the forest service with aid from private industry in restocking and protecting second-growth forests on crown lands which revert back to the government after their old-growth timber is harvested.

Canadian Forest Products, Ltd.: Existing industry should be given first consideration in granting licenses. An approximate balance between forest areas managed by the government and by private enterprise is desirable. Sustained yield policy on the coast, in-

cluding timber sales policy, should treat the coast working circle as a unit from an economic standpoint.

Columbia Cellulose Co.: A pulpwood grade for hemlock and balsam should be established in the coast market. Current log prices from trading points throughout the coast region should be used as a basis for appraisal of stumpage values in coast forests.

There was unanimity among the companies in urging strengthening of the government's forest service, now regarded as inadequate, and most of the companies favored appointment of an advisory board to provide closer liaison between industry and government.

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Good Hunting

Sportsmen bagged over 1,600 big game animals on Crown Zellerbach Corp.'s Oregon and Washington tree farms during 1955 hunting season, according to Vice Pres. E. P. Stamm, in charge of Northwest timber operations. The take consisted of 1,324 deer, 297 elk and 61 bear. CZ allows recreational use of its timber properties whenever fire hazard and safety of public and employes permits.

Two Meetings Set in South On Wage Law, on Planting

The new minimum wage law, which will affect logging practices in the South, probably increasing mechanization, will be the main subject of an American Pulpwood Association Southwest meeting Apr. 11-12, at Battle House in Mobile, Ala.

Tree planting will be discussed at the Southeast APA meeting Apr. 18-19 at Newberry, S.C.

Iowa Semi-Chem Mill Goes After Wood

Crandon Enterprises Inc., which took over a former Hinde & Dauch paperboard mill in Fort Madison, Iowa, and is going to convert it from straw to semi-chemical woodpulp, is going after its wood in a big way.

A pulpwood "rally" was held, drawing some 80 people, to discuss ways to grow pulpwood in Iowa, Illinois and Missouri. Joseph L. Gidwitz, president of Crandon, says it will spend \$1,000,000 a year for wood and \$2,000,000 to rebuild the mill. The mill plans to consume 400 tons of wood per day.

A Family Tree Farm Family program is projected for the 3 states which already have 150,000 acres under tree farming operation. Wood is already being accumulated.

James McClellan, chief forester, American Forest Products Industries, Inc., and Henry M. Shephard, field engineer, American Pulpwood Assn., addressed the group.

This will be Iowa's second woodpulp mill—first is the small 3-digester semi-chem board mill of Barrett Division (Allied Chemical & Dye) at Dubuque.

For pulpwood news—read **PULP & PAPER**



MURCO
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Slasher

engineered & built to do a particular job!

- V-Belt driven saws
- Quick, easy change saw arbors
- Saw arbors and shafts mounted on heavy duty, anti-friction pillow block bearings

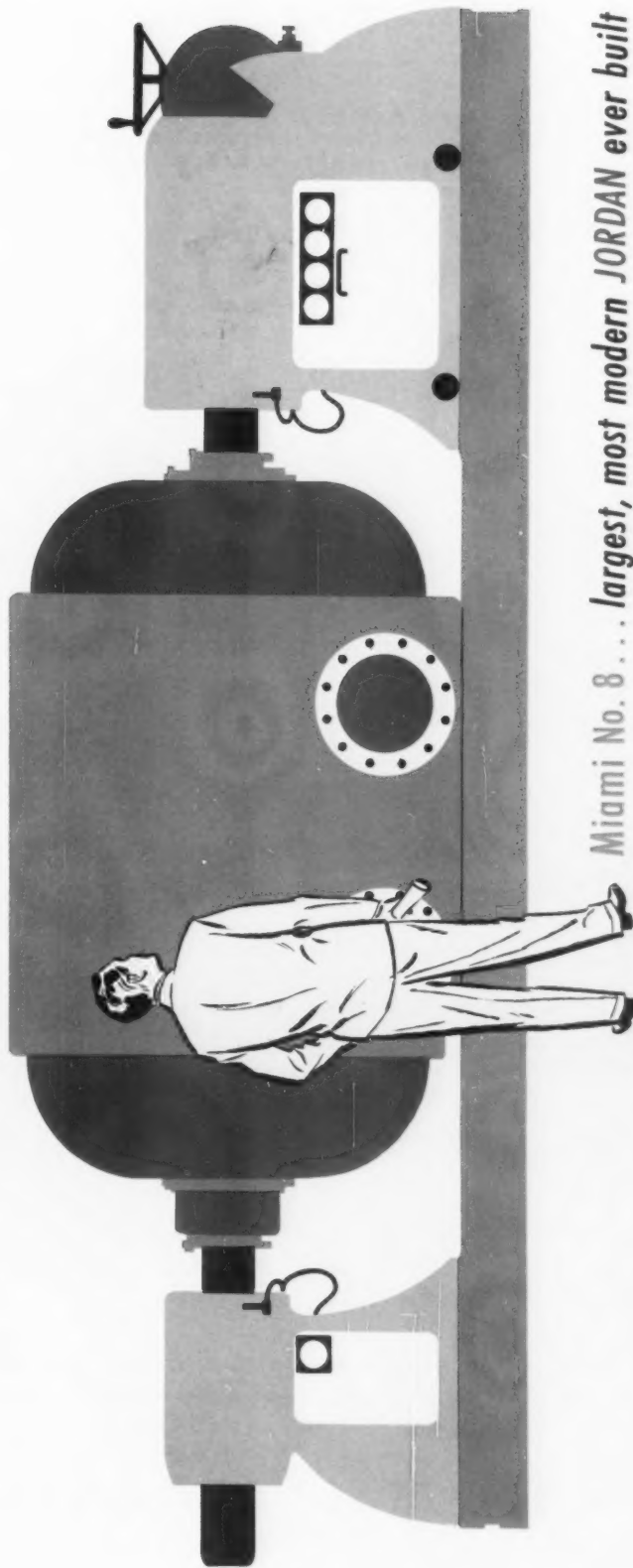
WRITE for quotations. Send us the following:

1. Length of logs to be cut.
2. Desired length of logs after cutting.
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A complete piece of machinery, built, erected and match-marked in our plant for erection at the mill . . . rugged and sturdy to withstand the extremely hard usage to which a pulpwood slasher is subjected . . . quick and easy change saw arbors . . . V-Belt driven saws. The **MURCO** Pulpwood Slasher can be furnished with any number of saws to cut any specified length stick of any maximum diameter . . . also complete with a log haul if required . . . chain feed drive can be furnished to incorporate a multiple speed motor so that the speed of the feed can be changed if desired.

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ABITIBI INTRODUCES "ARTIFICIAL LUMBER" PRODUCT—When Archie Livingston, of Abitibi Power & Paper Co.'s central engineering department, set off for Europe last Spring with a neatly tied bundle of small poplar logs, customs officers probably regarded him with suspicion. The man was obviously engaged in a mysterious mission, and his explanation must have caused bewilderment, for the idea was to have the logs converted into shavings in Germany and then shipped back to Canada.

But it was all in the line of research and good business. Abitibi merely wanted to know whether Ontario poplar wood, of which it had an abundant supply, could be satisfactorily prepared for a special process to manufacture shavings board or artificial lumber. It was found that it could, and so a new plant is being built at Sturgeon Falls, Ont., where the company already has a hardboard mill.

The project goes back to 1949 when Abitibi's technical staff was seeking a companion product for hardboard.

They wanted an artificial "lumber" made from "weed" wood, mixed with resins and pressed into sheet form.

Les Cleminson directed economic studies that proved the project sound. He was assisted by Mike Koerner. Max Yan and Archie Livingston flew to Hamburg, Germany, to study the synthetic lumber industry there—a trip Mr. Livingston was to repeat when

carrying his bundle of logs.

A pilot plant was set up at Abitibi's research laboratory in Sault Ste. Marie to test processes based on German methods adapted to Canadian conditions. Dr. Rodger Dorland is head of central research and development there. Max Yan and Ned Hale have also been active in research, with Ross Silversides working with Mr. Cleminson and Mr. Koerner.

NEW ADDITIONS FOR ELK FALLS—TO OPERATE IN FEW MONTHS—In addition to the 260-in. kraft-newsprint machine being supplied by Beloit Iron Works, Elk Falls Co., subsidiary of Crown Zellerbach

IT GOES IN HERE—a mat of poplar shavings is fed by ARNOLD WILLOUGHBY of Abitibi into a laboratory hot press, and it comes out a board $\frac{1}{4}$ in. thick, with density of 37 lbs. per cu. ft. This newest Abitibi product will be marketed as a companion to hardboard now manufactured at Sturgeon Falls mill.



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Write today for full details of complete line of Vari-Bow (24" face to 210") and Fixed Bow (1" face to 320") Expanders.

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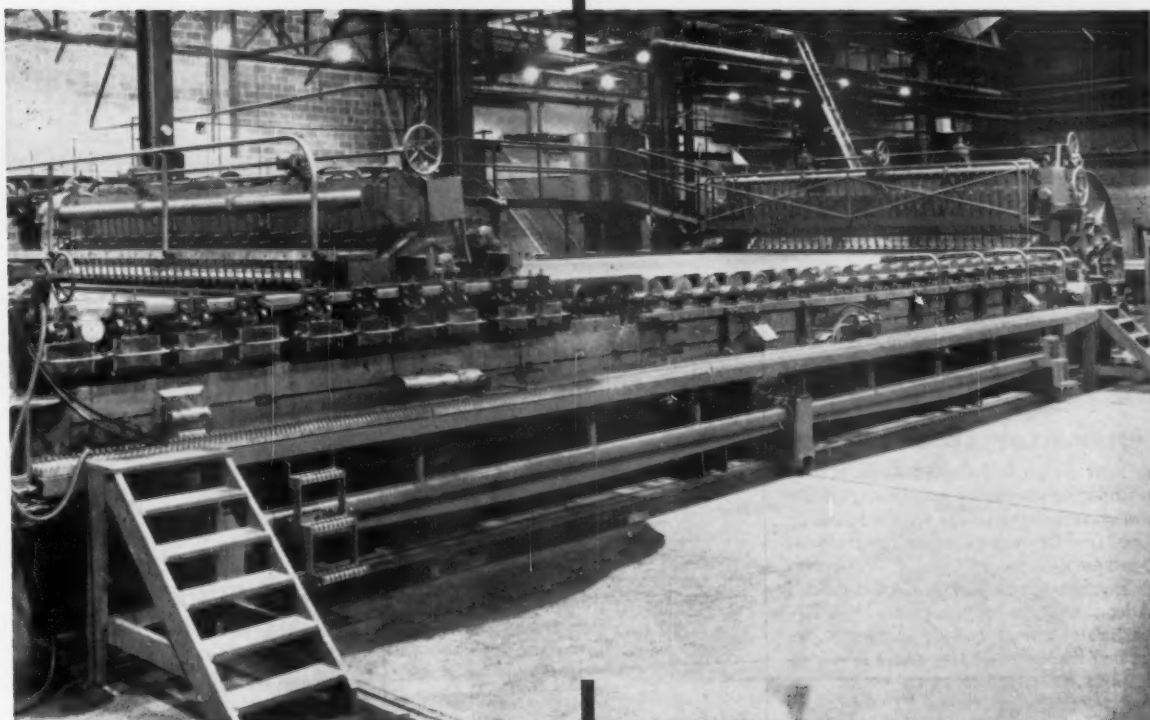
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COOPER ALLOY CORPORATION BRIEFS

• Edited by GEORGE BLACK

VALVE CLINICS

In spite of our belief that the Cooper Alloy stainless steel valve offers the best in design and operating features, we take it to school regularly. This "school" consists of continual study by field engineers, design engineers and by industry itself subjecting it to intensive examination and reporting their findings at organized Valve Clinics.

Cooper Alloy Valve Clinics have been held in dozens of leading plants, including Dow, DuPont, Mathieson, Celanese, Pfizer and many others. Arrangements for such a clinic in your own plant may be made through our Public Relations Division.



"FLEX-ALLOY" STAINLESS PUMP

A new line of stainless steel rotory pumps for corrosive solutions, abrasive slurries and fluids which must be kept free from contamination has just been announced by our Vanton Pump & Equipment Division. Called "Flex-Alloy" these new pumps in type 304 or 316 stainless (other alloys on request) incorporate the same no-stuffing box, no-shaft seals, no-gasket features of the popular "flex-i-liner" plastic pump series. Full details are given in Bulletin VP561.



FAST AND COLD

On October 14, 1947, the Bell X-1 made history by flashing through the skies faster than sound. Cooper Alloy is proud to have been teamed with the Glasby Company in helping Bell Aircraft carve its notch in history by furnishing the 30" diameter, 3" wall stainless steel sphere required for handling the liquid nitrogen.



COOPER ALLOY
CORPORATION • HILLSIDE, N.J.

Canada, will install four Waterous grinders, a groundwood screen, three 9½x14 ft. groundwood deckers and a groundwood bull screen at its Duncan Bay, B.C., mill.

The installations are part of a \$29,000,000 expansion program to be completed after midyear. The kraft pulp mill being added to the original newsprint mill will have a daily production of 500 tons dry. A 175-ton kraft bleach plant will be installed and both bleached and unbleached kraft pulp will be available for the new paper machine when scheduled on kraft paper grades.

The machine, with maximum design speed of 2000 fpm, will be equipped with a pressure headbox and slice and the Fourdrinier is designed for a 260-in. wire of 126 ft. length. It will have a suction pickup, but will start operating with a conventional couch arrangement. The dryer section will consist of 50 paper dryers and 10 felt dryers, all 60 in. diameter. The dryers will be divided into three sections. A size press will be between the second and third dryer sections. Two open-sided calender stacks will each have 12 top rolls and a 40-in. Farrelloy bottom roll. A 4500 fpm heavy-duty double drum winder will have 20-in. drums and pancake motor driven shear type slitters.

DRIVE FOR MACHINE—It will be the Beloit mechanical differential type with separate differential gear units at the couch, first press, second press, first and second dryer sections, two calender sections and reel positions. Maximum speed is designed for 2000 fpm with cases, bearings, shafts, etc., suitable for a future gear change to give 2500 fpm paper speed. A 2300 hp, 150 psi back pressure turbine will operate between 160 and 1600 fpm paper speed. With individual differential gear changes the machine may be operated within a range of 250-2500 fpm.

A gang mill is to be operated on recovery of select lumber from current timber usage, and a 26-in. Cam-bio wood barker will be installed in this unit.

PLANS FOR POWELL RIVER—Powell River Co.'s annual newsprint output will reach an unprecedented 500,000 tons a year when its ninth paper machine goes into operation next Fall, according to Harold S. Foley, chairman of the board, who told the company's 25-Year Club in Powell River that 1955 was the "most dynamic year North America has experienced," with the future looking very good. "We'll sell every ton of newsprint and pulp we can produce this year," he said.



For New Hooker Chemicals Ltd.

LESLIE H. SCHNURSTEIN (left) and LAWRENCE P. HALLAHAN (right), have been named Prod. Supt. and Plant Engr., respectively, for the \$11,000,000 chlorine-caustic soda plant of Hooker Chemicals, Ltd., now under construction at North Vancouver, B. C. Thomas E. Moffitt, Exec. Vice Pres. of Hooker Electrochemical Co., said the men will be responsible to Robert E. Noble, recently appointed Works Mgr. for the plant.

U.K. NEWSPRINT PRICES UP—A recently authorized increase of nearly \$12 a ton brought United Kingdom newsprint prices to the equivalent of \$146 (U.S.) per short ton. Higher production costs, especially for groundwood purchased by the mills, were given as the reason for the increase. U.K. newsprint capacity exceeds 700,000 tons a year.

When plans
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P-56

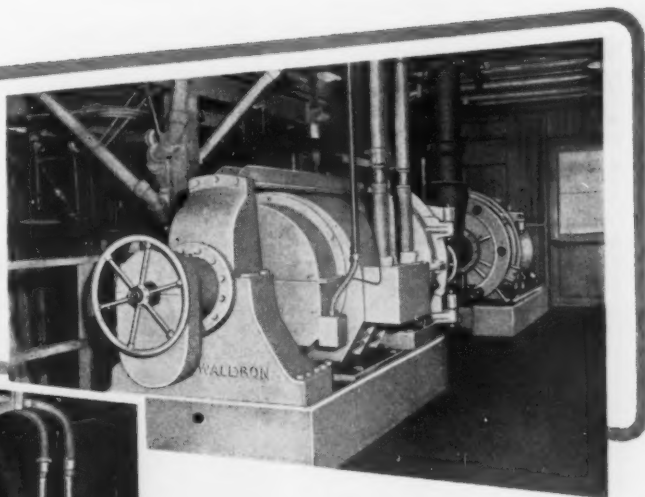
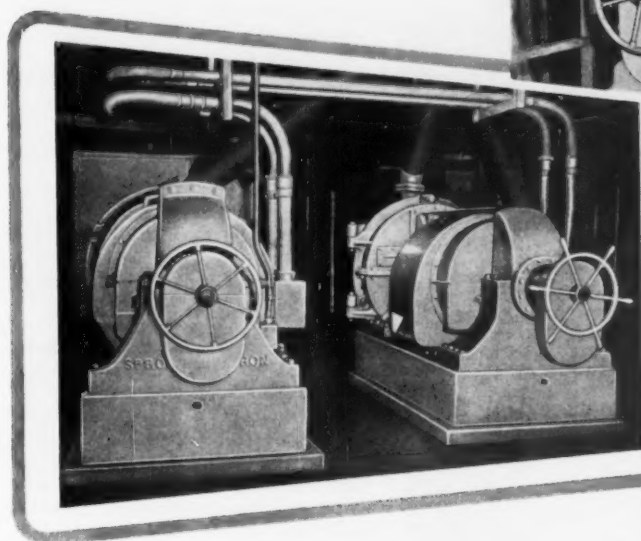


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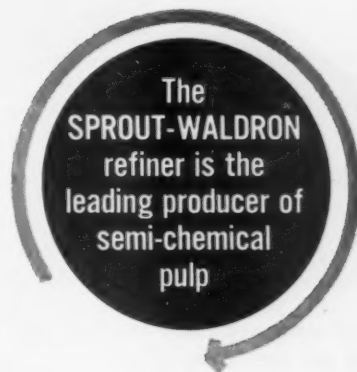


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Four of the seven Sprout-Waldron Refiners installed at Sonoco Products Co., Hartsville, S. C., pulping chips for 9-point corrugating board. Two Sprout-Waldron 36-1 Refiners installed in 1939 refine waste corrugated board stock. Five Sprout-Waldron 36-2 Refiners pulp hardwood neutral sulphite semi-chemical chips in a 2-stage refining system. The five 36-2 Refiners were ordered over a nine-year period. Repeat orders are the best evidence of customer satisfaction.

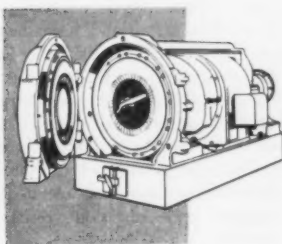
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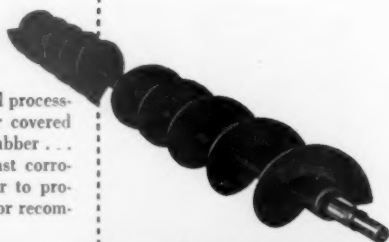
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**EQUIPMENT AND
SUPPLY NEWS**

JOHNS-MANVILLE gives complete information on its hydrous calcium silicate for hot outdoor piping in a new booklet, "Thermobestos Pipe and Block insulation for hot outdoor piping in a new 22 E. 40th St., N.Y.C. 16.

SHELL CHEMICAL CORP. is building a new resin unit at its Houston plant to manufacture market development quantities of new epoxy resins, advises C. W. HUMPHREYS, manufacturing vice president. Epon resins, due to their unique combination of adhesion, reports Mr. Humphreys, have set new standards for the surface coating industry.

PUSEY & JONES CORP. unveiled its new wire and felt guide during Paper Week. The new air-operated guide has been in successful operation in a large Eastern mill for several months.

BABCOCK & WILCOX CO.'s Tubular Products Division has 3 new booklets: "Heat Treatment of Air Hardening Alloys on Welding," Bulletin No. TR-543, furnishes metallurgical data on postweld heat treatment. Bulletin TDC-162A describes welding characteristics of austenitic and ferritic types of stainless steels and various welding techniques and methods. Bulletin TB-362 tells through case histories how B&W electric-resistance-welded carbon steel mechanical tubing solved engineering problems and simplified production and reduced cost. For any of these bulletins write to B&W at Beaver Falls, Pa.

COCHRANE WATER CONDITIONING LTD. has assumed engineering, manufacturing and sales activities in Canada as subsidiary of Cochrane Corp., with offices at 940 Lansdowne Ave., Toronto 4. MURRAY DOBIER is vice pres. and gen. mgr., V. C. GERMAN, sales mgr. and J. F. HAYWARD, sales engr. R. G. RIDDELL, sales engr., will be in charge of Montreal office at 1010 Beaver St. C. C. Moore & Co., engineers, Vancouver 2, are exclusive representatives in British Columbia.

ELECTRIC STEEL FOUNDRY has issued a new catalog alloy and stainless steels for pulp-paper and other industries. This 102-page book, available from Esco's Portland, Ore. headquarters or, for export business, from Esco International, New York City, was prepared by design engineers, metallurgists, purchasing agents and others. It includes corrosion resistant data, chemical composition, representative mechanical properties of corrosion resistant, heat resistant, impact and abrasion resistant alloy metals.

ALLOY TUBE DIVISION of Carpenter Steel Co., is now marketing rigid unplasticized PVC pipe.

MERRICK SCALE MFG. CO. has a new electronic conveyor scale. Designated as type "H" Weightometer, this unit incorporates continuous integration and is extremely sensitive to load variation, highly accurate, steady "No-Creep Zero" balance.

BRISTOL CO. describes its miniature precision inverter, the Syncroverter Switch, in bulletin AV2002. Ask their aircraft components division at Waterbury 20, Conn. for your copy.

FISCHER & PORTER has developed an immersed float vacuum transmitter, primarily designed for use with automatic proportioning chlorinators. Called the Fischer & Porter Immersed Float Vacuum Transmitter, it is unaffected by chlorine, sewage gases or weather, with virtually no maintenance required. F&P also has a new bulletin (No. 90-130-24) on its automatic data logger in the pulp and paper industry. The system has a capacity of recording automatically up to 200 inputs from process variables, available from F&P, 618 Jacksonville Rd., Hatboro, Pa.

RELIANCE ELECTRIC & ENGINEERING CO. describes its new line of Reliance Gearmotors in bulletin E-2408, "Reduce Speed," yours by writing to Reliance at 1088 Ivanhoe Rd., Cleveland 10.

FULLER CO. offers a reprint on uses of air as a conveyor. It shows how bulk materials may be successfully moved by air in many industries. Ask for GDM-35 from Fuller at Catasaugua, Pa.

GRINNELL CO. has a catalog on corrosion resistant pipe fittings and flanges in normal impact grade and high impact, rigid PVC. Write to 260 West Exchange St., Providence 1, R.I.

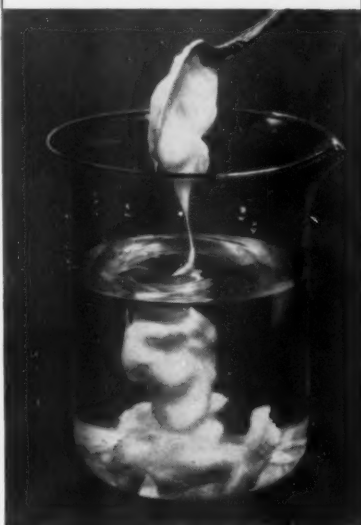
CRANE CO. announces a new cast stainless steel pulp-stock valve in a weight and cost-saving narrow design, according to J. A. DWYER, vice president of industrial sales. Catalog 1450 describes it and can be had from 836 S. Michigan Ave., Chicago 5.

SANDY HILL IRON & BRASS WORKS "Cleveland Type" oil-film bearings, designed to meet power transmission conditions in pulp and paper mills, are described in a special brochure. ALLEN A. LOWE, sales promotion manager says they are fully effective at low speeds and a peripheral speed as low as 10 fpm may be maintained. Write for further information to Sandy Hill at Hudson Falls, N.Y.

KILL FOAM THE EASY WAY...

New G-E silicone Anti-Foam 60 disperses easily—pays for itself

CONVENTIONAL ANTI-FOAM



Conventional high-viscosity silicone anti-foam agents (above) do not disperse readily in water—require vigorous stirring.

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Low-viscosity G-E ANTI-FOAM 60, however, can be poured—and disperses instantly!

Costly, troublesome foaming in paper-making operations can now be controlled—more easily—with General Electric's new silicone ANTI-FOAM 60. Easy to disperse, this low-viscosity silicone emulsion can be used as supplied, or reduced with water to desired concentrations with little or no stirring.

ANTI-FOAM 60 pays for itself by the way it reduces processing time, eliminates costly boil-overs, increases kettle capacity. Incredibly small amounts are needed, for example:

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Important Changes In Kimberly-Clark

John R. Kimberly, president and chairman of Kimberly-Clark, is new president of Spruce Falls Power & Paper Co., Kapuskasing, Ont., succeeding Charles H. Sage, retired.

C. G. Russell Johnson, recently made chief engineer of K-C, was elected a vice president.

Gordon Cosens, general mgr. of woodlands, and F. H. "Sprig" Werling, manager of mills, were elected new assistant vice presidents.

Harry W. Pierce is manager of the Kimberly, Wis., mill, which had not been announced in these columns, though it happened some months ago. He was director and chief planner of service operations at Neenah headquarters.

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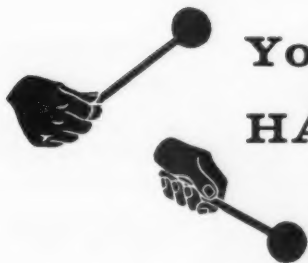
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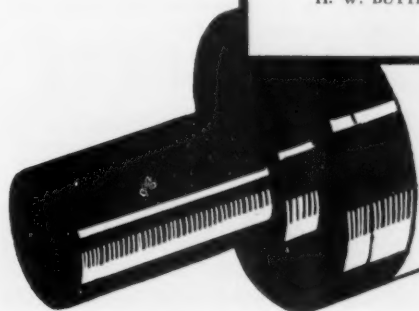
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DURA-SMOOTH CALENDER ROLLS

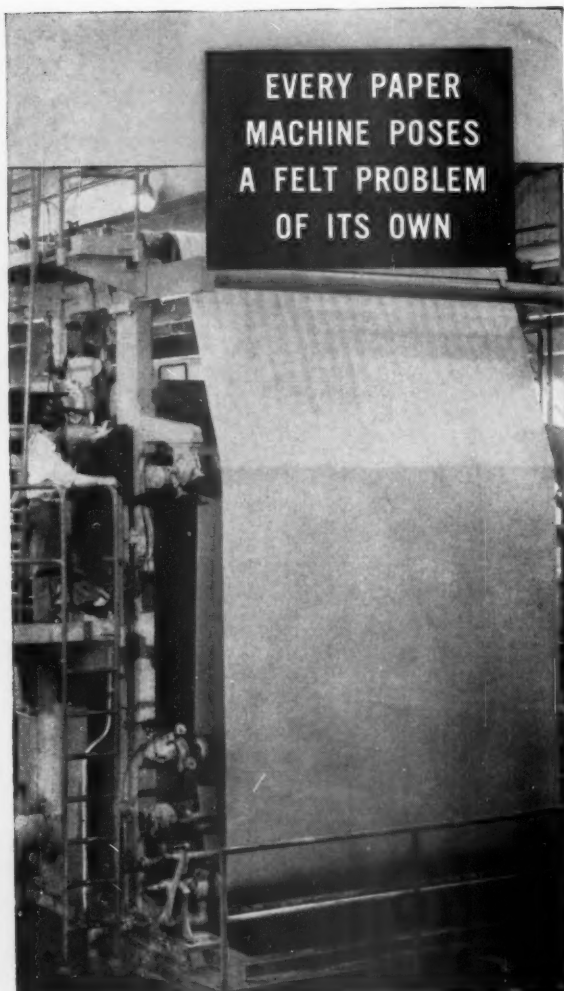
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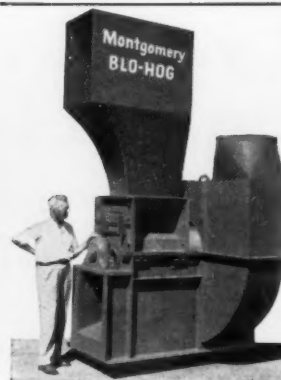
All such variations affect the drag on a felt—its porosity—its time of service. And they all pose problems that have to be solved.

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Sumner Iron Works, Everett, Washington, W. Coast Rep.; Canadian Sumner Iron Works, Ltd., Vancouver, B. C., Canadian Rep.

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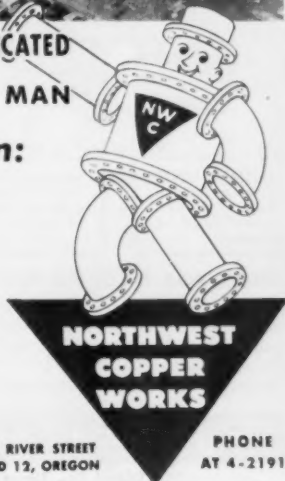
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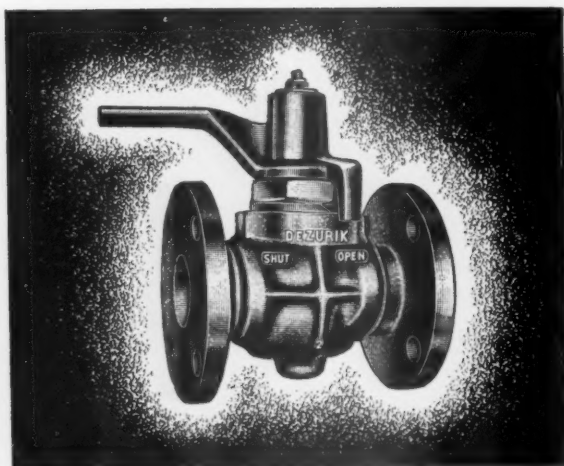
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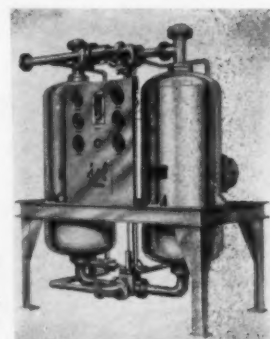
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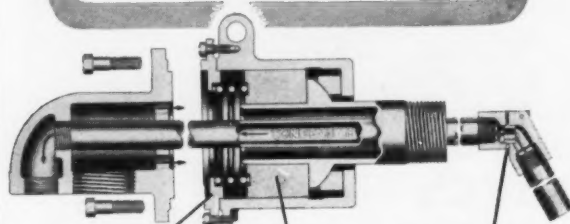
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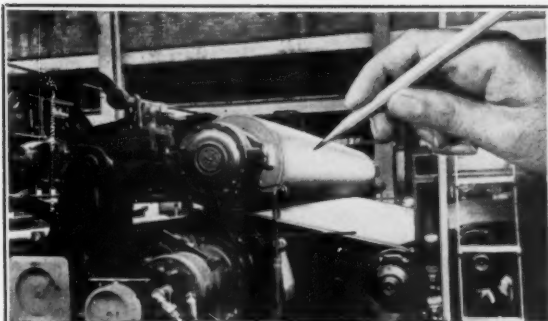
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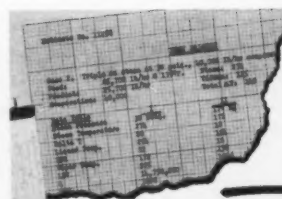
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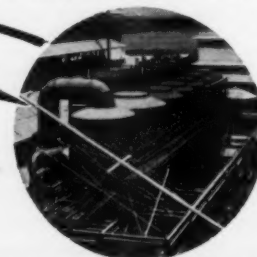


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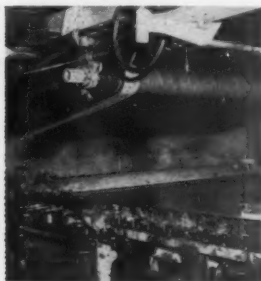
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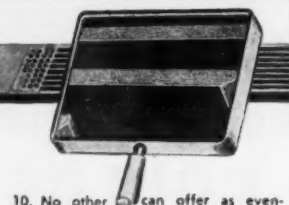
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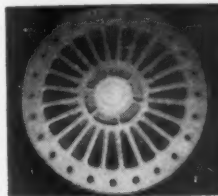
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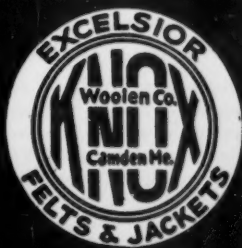
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Gathering this data, the USFS, of course, had lots of help from this industry. But this industry did not have any part in the conclusions which USFS drew from the data, based on small "samplings," etc.

As a government bureau, the USFS official releases get a "break." They are handled almost as "must" stories in many papers, especially in forest areas. No newspaper had enough space for the whole report. Most used only the first few paragraphs of the release. This can be powerful propaganda, depending on what USFS features in the opening paragraphs.

At the recent Paper Week, in New York, the American Pulpwood Association performed a fine service by arranging for a "debate" on the report. This brought out views, "slants" and ideas of national, state, institutional and industry foresters regarding the predictions of the USFS (and they all have varying views on the controversy, you may be sure). Executive leaders of this industry also discussed the report in their New York meetings.

PULP & PAPER has devoted major space in this issue—in our PULPWOOD SECTION—to the first published full report of the discussions, which overshadowed in significance nearly all other events of Paper Week.

ABOUT OUR FIRST REPORT—Ever since USFS announced its forecasts and with them, its appraisal of what government, industry and small wood owners are doing about our wood supply, PULP & PAPER editors have been on the job—drawing together information from all reliable sources on this problem.

If you missed it, we would like to call your attention to our article in the Dec. 1955 issue of P&P, starting on page 69, entitled "U.S. Timber Future—as Forest Service Sees It and as Critics See the FS Report."

The USFS showed good strategy in making its big announcement of the first appraisal of our timber future in Portland, Ore., before a most agreeable audience, indeed—the Society of American Foresters. This group has long been recognized as vigorous champions of conservation, and some of its critics have felt that in its enthusiasm, facts have often been somewhat slighted if they didn't fit in with their avowed principles. The AFA spokesman at Paper Week stressed their view that "public understanding" of forest resources is paramount, and that industry should not "haggle" over details. The industry feels these details, however, are most important—they color the public attitude toward industry for good or bad. And these "details" can give the public a wrong picture of our resources.

FIRST TO GIVE INDUSTRY'S SIDE—PULP & PAPER, in the December issue, was the first publication to give

readers in this great industry, the "other side"—industry's side—of the USFS story. Newspapers in big cities and mill towns, and many other publications, published only the USFS release.

CREDIT OUR MR. BLACKERBY—We are a bit late in this, but we especially would like to point out that our editor in Portland, Ore., Louis H. Blackerby, was largely responsible for the story, giving both government and industry sides.

As a graduate forester from Oregon State College, and long experience in covering forest world activities for P&P, Mr. Blackerby was well-qualified to do just what he did. He wrote with authority.

Now we have followed up his story in December, with this issue's special complete report on Paper Week's "friendly debate" over our forest future. It merits your close reading, if you intend to continue to live and work in this industry.



Editor Blackerby

WHAT WE THINK ABOUT IT—We think it is rather silly to be trying to predict what our forests will be in the year 2000—almost half a century hence—on the basis of our knowledge today. Who knows—we might have swift-growing new forests around the mills, specially nurtured with chemicals in some kind of fantastic hothouses, maybe one forest above the other, by then! Or, in this atomic age or another "Age" to come, we may have no forests at all!

It seems much more sensible and useful to have continuing surveys, probably annually, based on continuing and expanding sources of data, for immediate years ahead. Instead of the USFS's decennial publicity blast that catches some newspaper headlines, and then catches hell from industry for its omissions and dogmatic conclusions.

"Harried—Not Halted!"

• Pulp and paper mills appreciate their mill-town daily newspapers. So it wasn't surprising that Everett pulp and paper mills offered recovery assistance when the Everett, Wash., Herald building was engulfed by fire Feb. 22.

We especially liked the newspaper's choice of representative terms regarding its situation, e.g., publication was "harried but not halted."

A Bigger Pay Check?

Pollsters in recent years have been trying to find out what workers want from their jobs. We are not surprised to learn that the snap answer—good wages—is wrong. We are, though, somewhat amazed that the various agencies conducting these polls are attempting to present as something new some basic facts that practically every working man and nearly every employer have been aware of for a long time. In order of preference, workers want (1) appreciation, (2) the feeling of being in on things, (3) help with personal problems, (4) job security, and (5)—and finally—good wages.

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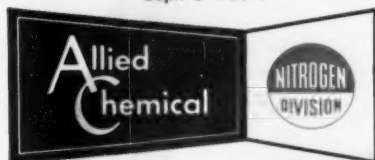
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